

ED 365 035

EC 302 660

TITLE Communicator, Journal of the California Association for the Gifted (CAG), 1993.

INSTITUTION California Association for the Gifted.

PUB DATE 93

NOTE 185p.; Individual issues have been separately analyzed; see EC 302 661-665.

AVAILABLE FROM California Association for the Gifted, 23684 Schoenborn St., Canoga Park, CA 91304 (\$15 annual subscription).

PUB TYPE Collected Works - Serials (022)

JOURNAL CIT Communicator; v23 n1-5 Jan-Nov 1993

EDRS PRICE MF01/PC08 Plus Postage.

DESCRIPTORS *Child Rearing; Educational Practices; Elementary Secondary Education; *Gifted; High Schools; *Mathematics Education; Middle Schools; *Science Education; Student Development; *Talent Development; Teaching Methods

ABSTRACT

These five issues of the serial "Communicator" published during 1993 discuss various aspects of gifted education, focusing, respectively, on mathematics and science, middle school gifted, parenting the gifted, talent development, and high school gifted. Articles include: "Our Most Important Investment for the Future: The Education of Our Youth" (Marian C. Diamond); "Making Math and Science Accessible and Meaningful to Girls: An Economic Imperative" (Mary Thomas-Vallens); "Mathematical Thinking at Its Best" (Marcy Cook); "Math in Motion: A Hands-On Creative Approach to Teaching Mathematics in Elementary Schools Using Origami" (Barbara Pearl); "Accelerating in Mathematics: Academic and Social-Emotional Impact" (Terry A. Thomas); "Fast-Paced High School Science for the Academically Talented: A Six-Year Perspective" (Sharon J. Lynch); "Middle School Madness" (Terry A. Thomas); "Developing Leadership during the Middle School Years" (Margaret Gosfield); "Middle School Survey Report: Impact on Gifted Students (Executive Summary)" (Mary Ruth Coleman and James J. Gallagher); "Parenting the Middle School Gifted Child" (Sharon Freitas); "In Search of the Owner's Manual" (Terrie Gray); "Talent Development in Education" (John F. Feldhusen); "Schools Are Places for Talent Development: New Directions for the Schoolwide Enrichment Model" (Joseph S. Renzulli); "The Development of Academic Talent" (Joyce VanTassel-Baska); "Dealing with the Challenges of Reform and Restructuring: Will Gifted Education Survive?" (Donald J. Treffinger); and "Summer Seminar '93--California in the 21st Century" (Janis Van Dreal). Issues also contain editorials, poetry, and columns. (JDD)

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Communicator
Volume 23
Numbers 1-5
January-November 1993

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COMMUNICATOR

MATH & SCIENCE

Our Most Important Investment for the Future: The Education of Our Youth

by Marian C. Diamond

In the past decade, about \$100 million has been spent on new biology buildings at the University of California at Berkeley campus:

1. the Life Sciences addition, which consists primarily of laboratories for molecular and cell biologists;
2. a genetics and plant biology building, again mostly laboratories; and
3. the renovation of the old Life Sciences Building, which will house the library, classrooms, and research laboratories—a true university building.

The question I ask today is, "Who will fill these buildings in the years ahead?" As we look at the background of the majority of the children in our state today, it is apparent that science and math are not a major part of their past culture. Who, then, will utilize the rich resources in these University science buildings and others like them in the twenty-first century? To me it is essential to awaken the minds of the children today to the excitement and satisfaction of education in general and to math and science in particular.

After 30 years of studying the brain and its potential, I think it is time to apply what we have learned in the laboratory to the education of our youth. At birth we have all the nerve cells we are going to have in the outer layers of our brain, the cerebral cortex, the massive collection of nerve cells responsible for most of

Continued on page 34

Making Math and Science Accessible and Meaningful to Girls: An Economic Imperative

by Mary Thomas-Vallens

Our country's competitiveness in the technological world is largely dependent on the success of girls and women in math and science. To some this may seem like a bold and perhaps farfetched notion. However, many recent studies not only support such a statement, but urge parents, educators and our society to pay heed to the claim. The education of girls today is critical to our future and to theirs.

In its highly acclaimed, comprehensive report, *How Schools Shortchange Girls*, the American Association of University Women (AAUW) negates the assumption that our public schools treat boys and girls equally. The study is a "synthesis of all available research on the subject of girls in school" (AAUW, 1992). Citing research from education, business, and government, the study shows that the future of girls and women is rapidly changing, and much is at stake. The girls of today will be needed to fill a great many technological jobs in the coming century. A strong course load in math and science is required, and yet girls are being turned off and turned away from pursuing these academic areas.

Consider the following: *Workforce 2000*, a report made for the United States Department of Labor, cites that by the year 2000, 66 percent of the new entrants to the work force and 47 percent of the entire work force will be women. The National Research Council reports that the

Continued on page 35



PRESIDENT'S COLUMN



Sandra Kaplan

The need for an academically rigorous curriculum for gifted students is evident. The means by which to attain this academic rigor is not as evident. Regardless of the subject matter, there appear to be some strategies that have the potential to stimulate academic rigor:

- a classical orientation or perspective to what is known about the area of study or the foundation theories and principles in a body of knowledge
- a philosophical reference to the area of study, including an examination of the aesthetics and ethics that affect perception and appreciation of the subject matter
- a means of relating, connecting, and associating the subject matter under study with other areas of study
- a futuristic analysis of the subject under study or how and why it will survive, change, and/or develop in the future.

Academic rigor is not simply providing students with more or harder work. While these factors are used as traditional benchmarks for academically challenging curriculum by many, new definitions are needed to match these educational times.

31st Annual Conference

March 5-7, 1993

San Jose, CA

Don't Miss It!



PUBLISHED BY THE CALIFORNIA ASSOCIATION FOR THE GIFTED

Administrative Assistant, Sharon Mountford

818/888-8846...FAX 818/888-6225

The *CAG Communicator* is published five times during the year, in September, November, January, April, and June. Opinions expressed by individual authors do not necessarily represent official positions of the Association. Subscriptions are available to non-members at an annual cost of \$15.00.

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CAG encourages all interested parties to submit articles for publication. All submissions will be given careful consideration. Photos and camera-ready art work are particularly desirable. Student work should be accompanied by teacher's name and school. Send all material with your name, address, and phone number to Jean Drum, *Communicator* Editor, 7822 Belgrave Avenue, Garden Grove, CA 92641. You may phone Ms. Drum at 714/892-1745.

Reprinting of materials

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CALENDAR

Saturday, January 23, 1993, 8:30 AM to Noon
CAG Board Outreach Program
 Westgate Hotel, 1055 Second Avenue, San Diego
 Call the CAG office for information, 818/888-8846

Saturday, January 23, 1993
Amphitheater Schools presents *Impact II*
Exploring Problem Solving with Treffinger and Maker
 Tucson, Arizona
 For information call P. MacDonald at 602/690-8079

Saturday, January 30, 1993...8:00 AM to 12:45 PM
Orange County Council 20th Regional Conference
Keys to GATE, Solving the Puzzle
 Century High School
 1401 South Grand Ave., Santa Ana, California
 For information call Pat Phelan at 714/558-5643

Saturday, January 30, 1993...9:00 to 11:30 AM
Author and Book Workshop, Pacific Region
 Ventura College
 For information call M. Gosfield at 805/648-5391

February 3-6, 1993
California Association for Bilingual Education (CABE)
18th Annual Conference: *The Best of Both Worlds*
 Anaheim Hilton and Towers, Anaheim, CA
 For information call 714/369-6455

February 12-13, 1993
Colorado River Conference II
AEGT: Arizona Educators for Gifted and Talented
 Lake Havasu City, Arizona
 For information call P. MacDonald at 602/690-8079

March 5-7, 1993
31st Annual CAG Conference,
Theory into Practice: Orchestrating Excellence
 Convention Center, San Jose, CA
 For information call 818/888-8846

April 23-24, 1993
Association for the Education of Gifted Underachieving
Students (AEGUS)
6th Annual National Conference
High Potential At Risk: Taking a Positive Approach
 Portland State University, Portland, Oregon
 For information call 206/230-5372

August 8-12, 1993
10th World Congress on Gifted and Talented Education
A Gifted Globe
 Royal York Hotel, in the heart of Toronto, Canada
 For information call 416/978-2400

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Articles and student work to be considered for future issues of the *Communicator* should be submitted to the editor, Jean Drum at 7822 Belgrave Avenue, Garden Grove, CA 92641. Student art work and photographs of students involved in school activities are especially welcome. Charts and graphs should be camera ready. Material should be submitted on Mac disks, if possible. Contact the editor for a style sheet regarding preferred format for articles, especially for bibliographies.

EDITOR'S COLUMN

The Two Cultures: Still Separated by a Wall of Incomprehension?

by Jean Drum



Jean Drum

"Math? Oh, I'm lucky if I can balance my checkbook!"

"You mean that little gizmo in the whatsis is what makes it work?"

"That's art? Looks like a two-year-old painted it!"

"The book? Well, no, I didn't read the book, but I saw the movie."

If C.P. Snow, the Cambridge don who gave the world the phrase "the two cultures" were to read those sentences, he would be quite likely to recognize them as evidence of his thesis, namely, that the intellectual life of western society has been split into two groups that neither understand each other nor particularly want to understand each other. These two groups are the scientists on one side and the liberal arts people (Snow calls them "literary") on the other. Snow, who was by training a scientist and by vocation a writer, was part of both groups and said that he felt he was moving among two groups who were much the same in intelligence, had about the same background and education, and earned about the same income, yet had almost "ceased to communicate at all."

Scientists, he said, live in a culture which is "intensive, rigorous, and constantly in action." They discuss, argue, and explore, but the arts (music is the exception) are for the most part irrelevant, and the books, the novels, the plays, the history, which are bread and butter to literary persons, have no importance for them. "Well, I've tried a bit of Dickens," is their experience with the liberal arts.

The literary culture, on the other hand, is equally impoverished (indeed more so, in Snow's view.) He found his literary colleagues in complete ignorance of the meaning of mass or acceleration which he says is the scientific equivalent of asking, *Can you read?*

It has been more than thirty years since Snow explored this problem, and the world had changed enormously. Technology has grown exponentially, and the vocabulary of science and the concrete results of applied science surround us on all sides. Our fingers fly across the keyboards of computers with the glorious possibilities for instant correction of

typos, we and our luggage fly to any part of the globe in hours, and here in California we can see, via satellite, the Queen of England speaking at Windsor Castle or a Bosnian refugee child waving a tearful farewell even as those events are happening. English teachers use the vocabulary of science with casual familiarity and students at Caltech are required to take one non-science course every quarter. This seems like progress, but has the gap that Snow worried about really closed? Are the two cultures any closer to mutual comprehension and appreciation? Probably not.

At this point you may protest that it is not possible, not even reasonable, to expect everyone to be knowledgeable and competent in the details of science and technology. We don't all need to be able to solve a problem in physics. We don't all need to be able to explain recombinant DNA. We don't all need to be able to sight-read music either, or be able to discuss Wilson's Fourteen Points and their effect on the political dynamics of post-World War I Europe, or analyze the metaphysics of a sonnet by John Donne. A degree of specialization is sensible and efficient in any society, and having "two cultures" is probably inevitable and reasonable. After all, some members of a Stone Age tribe hunted mastodons while others perhaps made spears.

It's not the differences in details that are important, not whether you would rather read Dickens or work out a new program for your Mac, just as it's not the differences in details between two societal cultures (do you prefer potatoes, tortillas, or rice?) that really matter or cause friction. Problems occur when cultures cannot communicate to each other their most fundamental thoughts, and feelings and attitudes, and their basic approach to the questions of the human condition and experience. What a re-reading of Snow thirty years later suggests is that the great need is for the two cultures to come to understand how each thinks and works and views the world. Each side needs to be able to appreciate and respect the other side's mind set, walk a few miles in their moccasins, if you will.

An interesting research project which may shed some light on this issue was recently done by Sheila Tobias for the Research Corporation in Tucson, Arizona to explore the reasons why some gifted students fail to pursue science at the college level. The study was prompted by concern in our country about the projected shortfall of science workers and the fact that our science community is echoing Snow in decrying a general scientific illiteracy. In this project, six graduate students and one professor, all from nonscience fields, were recruited to "seriously audit" introductory physics or chemistry. Their task was to explore their personal encounters with the courses and "classroom culture" of beginning college science classes. These students had all been successful in high school mathematics and science classes and had chosen not to do science as undergraduates, not because they "couldn't" but because they felt they had a better option. As they audited beginning physics and chemistry classes, they did not find the rigors of science too hard. Indeed, the general feeling seemed to be that there was not *enough* mental challenge. They were put off by the emphasis on getting the right answer to a problem and going right on the next one, leaving no time for speculation on *why* it works that way. They wanted time to talk about side issues and discuss concepts, and they were bothered that the "real" science majors were so concerned with making fewer mistakes that they had no time to "enjoy the success, no time to use those skills in order to discover more or dig deeper." One participant said the science majors "ignored all the fun parts" of physics in their concentration on solving the equations.

Sheila Tobias' findings seem to suggest that the "literary" people are by no means unable to learn science, nor are they really unwilling or uninterested, but they do want to approach it from a different standpoint than that of the students who have been committed to science and only science from the beginning. Perhaps one way to bring the two cultures

closer together would be to restructure the presentation of science classes for non-science majors—teach science their way (lots of chances to ask *why*) but at the same time make certain that they see how a scientist deals with problem solving. Everyone needs to see how the other half thinks, why they work the way they do and how they get their results, even when they don't choose to work that way themselves. As we all know, however, the best learning happens when teaching style and learning style harmonize. Research being done with socially diverse cultures is saying some of these same things. And remember, none of this implies "dumbing down" any subject in any way. It means teaching it differently. It is entirely possible that those who make a serious career of science will continue to be the "traditional" science types, but, if a slightly different approach can broaden the general understanding of science and produce scientifically literate citizens, we shall have taken a step forward.

Of course, it needs to work the other way as well. It is important that scientists learn how non-scientists view the world and that they come to understand the value of that view. Dutifully sitting through the obligatory history of civ course and learning the relevant facts and dates (no problem – just like the periodic table) isn't enough either. Scientists need to have the experience of brainstorming problems that have no immediate and definite solution and learn how to live with that frustration.

What we really need for the 21st century is renaissance people who also have a specialty. These people would be superbly trained in their field of major interest, but they would also feel comfortable with other areas of learning, where they would enjoy dabbling without fear. Who better to do this than our gifted students?

PARENT TO PARENT

by Elizabeth Kendall

I remembered
again that
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...As I became
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children send
me.

September brought the beginning of the school year and a new preschool for my three-year-old gifted son. I agonized over the question of whether to send him to a structured environment or to a more relaxed environment. As he is my third and youngest child, I am quite familiar with this agony. It is present throughout the process of every "life-altering" decision made on behalf of my children.

When my son entered day care at 2-1/2, he was accustomed to being with a warm, gentle live-in babysitter from Brazil. We needed a more affordable situation, so after looking at virtually every possible day care provider, I decided on a local preschool with teachers bilingual in Spanish. At the time, my son spoke Portuguese and Spanish as well as he spoke English. I thought the familiarity of the language and some aspects of the culture would ease the transition. These teachers were also very prone to cuddling with the children. I liked that. I felt comfortable leaving my son there, and he felt comfortable too.

Later, he entered the "three-year-old room." This particular room had a large population of physically aggressive children. The "boys will be boys" attitude of the teacher contributed to the proliferation of violent games and aggressive behavior among the children. My son was learning behavior that was inconsistent with our family's values. Summer arrived, so I hired a part-time babysitter and kept my son at home. This was stressful and inefficient because I have difficulty focusing on my other responsibilities when the children are under-foot.

When the time came to select a new preschool, I chose the more structured environment because, although they were very firm about "proper" behavior, they let children choose their play activities for themselves. When my six-year-old daughter was three, I had considered this school for her. At that time, I had observed children in crisply pressed clothing, politely standing in line, waiting for a turn to speak with the teacher. Not wanting to see my socially compliant daughter become a programmed "Stepford child," I opted for a place where she could hammer nails and make

mud pies. She was happy there. Now I was placing my son in the very same "Stepford child institution" I had previously rejected. The reasons were sound: independent activity, no violent behavior condoned, and structure and its inherent security. We had moved into a home we were remodeling, so my son had many opportunities not only to hammer nails but to build things and grow vegetables and dig in the mud.

Intellectually, I had worked out the balance between my options and my requirements for my son. Emotionally, I was still struggling with the agony, the uncertainty, my lack of confidence in my decision. This school required you to kiss your child "goodbye" at the door and walk away. This was very difficult for my son. After discussing my concerns with the teacher, the administrator, the pediatrician, and seventy-five other important advisors, I decided to give him a little time to adjust.

Miraculously, after two weeks, he began to discuss school with enthusiasm. He wrote notes and drew pictures to give his new playmates. I could kiss him "goodbye" at the door and leave with confidence that he would have a satisfying experience. Every day I noted his progress as he adjusted rather smoothly to the new school. One morning, as I adored him through the window of the classroom, I was reminded of an important factor in parenting. He was busy talking to a friend. His teacher noticed me and let him know that his mommy wanted him to wave "goodbye" to her one more time. He responded quickly and eagerly like a good son, knowing that I needed a little more reassurance from him before I could "safely" go off on my own. Then it became clear. I remembered again that when my children are upset, they are often reacting to my feelings and emotions. In this case, a large part of his discomfort was due to his perceiving my ambivalence about the school. He was dependent on me to make the correct decision. As I became more confident with my decision, he became more comfortable with the school. It's amazing how much I learn when I step back and listen to the real messages my children send me.

Mathematical Thinking at its Best

by Marcy Cook

As teachers of the gifted, our global goal should be to **provoke thought**. Our students have the right to think, and they need a classroom climate which promotes, encourages, recognizes, supports, and rewards **thinking**. We must constantly strive to locate or create problems which involve much more than recall. We need to be certain that the problems have an educative component, which means that the student will learn from attempting the problem (and that the teacher will learn about the student's thinking from the attempt.)

We must provide problem-solving activities which transcend the narrow confines of basic definitions, skills, facts, and procedures. Although assessment may be more difficult, we should be providing problems that are open—problems that will have more than one right answer or more than one way to reach the answer. We should be careful not to reach closure too quickly.

Example: give students the direction that each letter of the alphabet has a numerical value:

<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>I</u>	<u>I</u>	<u>K</u>	<u>L</u>	<u>M</u>
1	2	3	4	5	6	7	8	9	10	11	12	13

<u>N</u>	<u>O</u>	<u>P</u>	<u>Q</u>	<u>R</u>	<u>S</u>	<u>T</u>	<u>U</u>	<u>V</u>	<u>W</u>	<u>X</u>	<u>Y</u>	<u>Z</u>
14	15	16	17	18	19	20	21	22	23	24	25	26

To find the value of a word such as "cat," we must add the value of "c" plus "a" plus "t" ($3 + 1 + 20 = 24$), thus the word "cat" is worth 24. Students could be challenged with problems such as, "How many cities in the world have a name that is a multiple of 10?" A piece of paper could be placed on a bulletin board so students could be encouraged to add new solutions to the problem. There is no need to "stop" the experimenting at the end of that math period or even that week. Perhaps the chart could be left all year long, with students adding to the list as they uncover new discoveries. For primary students, a more appropriate question might be, "How many animal names can we find with a value larger than 50?"

Problems need to be provided that have more than one right way to obtain the answer.

Students should be aware of a variety of problem-solving strategies and should evaluate which *process* they use to solve a problem, as well as analyzing what other strategies could have been used to solve that same problem. A sample list of strategies is in the box.

Problem-Solving Strategies

1. Use trial and error (estimate and check)
2. Draw a diagram or make a model
3. Eliminate
4. Look for a pattern
5. Simplify the problem
6. Work backwards
7. Organize the information
(table or graph)
8. Write an equation

Gifted and talented students should also be encouraged to create their own "good" problems and show various strategies that could be used to solve their own problems. They can be creative in math in other ways as well. How about designing a math bumper sticker? They can combine math and writing with such assignments as:

1. If you could adopt a number, which one would you adopt and why?
2. What color is math? Why?
3. What sound is math? Why?
4. If math could be an animal, which one would it be? Why?
5. Imagine a world without numbers. What would it be like?

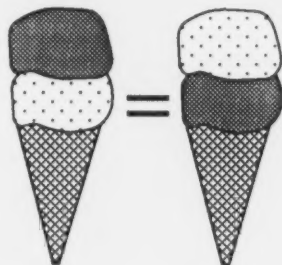
If we want to extend math for the able, we must provide opportunities to expand thinking and encourage creativity. We must expect divergent thought processing. Mere question/answer teaching, workbooks, rote learning, and textbook-based teaching do not improve skills in higher-order thinking. Higher-order skill development requires higher-order work. Students should often be directed to reach for

Ice-Cream Cones

An ice-cream parlor has eight flavors of ice cream:

CHOCOLATE	ORANGE
VANILLA	LIME
STRAWBERRY	LEMON
CHOCOLATE CHIP	GRAPE

How many different double-dip cones can be made?
(Vanilla-chocolate and chocolate-vanilla are counted as the same;
top or bottom. Placement of flavor is not important.)



patterns or generalizations. Once a smaller problem has been presented and achieved, the students should be applying the learning to larger problems. A perfect example is the ice-cream parlor problem.

With "younger" learners we are satisfied with the solution to the problem, but extensions for the "older" learner are critical. "After solving the problem, could you find out the number of different combinations no matter how many flavors of ice-cream you had? How many different combinations could Baskin-Robbins make with 31 flavors?"

If we as teachers are providing the ultimate mathematical environment for our students, the learning of basic skills is being integrated constantly with thinking, problem solving, and reasoning. We should be breaking away from traditional questions with one specific right answer and finding ways to ask good questions; the art of questioning becomes the key to the thinking classroom. Rather than giving students a problem such as this: "Given

a right triangle with one side 9 inches long and the other side 12 inches long, find the hypotenuse," a more valid thinking activity for a geometry class would be to ask students to write everything they can discover about a right triangle. With upper elementary students we often say "Find the area of a rectangle 4 feet by 6 feet." A more thought provoking problem might be to ask students to tell what they know about a rectangle with an area of 24 square feet. There is more opportunity to understand how the students think when we use the open question technique than when questions have specific right answers. As we open doors to thinking, we constantly must be careful to treat students' thinking with respect and view children's solution attempts as a part of the development of their mathematical thinking skills rather than as examples of faulty thinking that need to be corrected. (Paul Cobb, *Arithmetic Teacher*, September, 1988).

In a good learning situation students should be heard saying "I wonder if...?" "What if...?" "I wonder what would happen if...?" "Wouldn't it be possible...?" If these questions are not constantly occurring, we should re-evaluate the types of problems we are providing for our students. Our job, which is not an easy one, is to create an environment which challenges students to probe...to question...to persevere. We need to focus on challenging, questioning, and extending, while our students need to be visualizing, investigating, conjecturing, organizing, analyzing, validating, convincing, predicting, applying, generalizing, and evaluating.

The National Council of Teachers of Mathematics takes the position that mathematically talented and gifted students need an enriched and expanded curriculum that emphasizes higher-order thinking skills, nontraditional topics, and applications of skills and concepts in a variety of contexts. The major recommendation is to provide a broad and enriched view of mathematics in a context of higher expectation. We must look at restructuring the curriculum and instruction with an emphasis on higher-order thinking. There is no doubt that learning activities must be made more challenging and engaging. Asking students to justify their thinking may be one of the best ways to move toward creating a truly thinking program. The following problem is just one of many intriguing types of problems to encourage justification of thought.

There is no doubt that teaching the mathematically talented is a challenging task. The teacher of the gifted needs to have command of the subject matter, be committed to excellence, demand high standards, and be stimulating. The ability to provoke thought is a MUST!! As George Polya said, "What a teacher says in the classroom is not unimportant, but what the students think is a thousand times more important."

A number of years ago, one of the major California newspapers had an article which said "...there are very few teachers capable of inspiring students today. There are few challengers of the mind, few provokers of thought, few who can arouse one from the slumber of apathy..." As GATE teachers, we must be among those few!

Marcy Cook is a math specialist and consultant for elementary schools. She can be reached at P.O. Box 5840, Balboa Island, CA 92662-5840.

Explain Why Your Answer is Correct?

Defend Your Thinking!

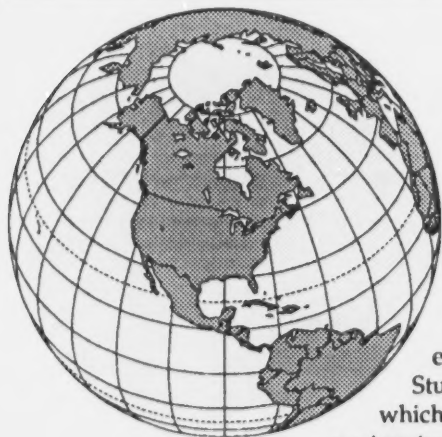
You have five wooden sticks which are unbendable and unbreakable, in lengths of:

1 inch 2 inches 4 inches
2 inches 1 inch

Which of these figures can you make?

Explain why not for those which you cannot make.

rectangle
square
scalene triangle
quadrilateral which is not a rectangle
equilateral triangle
rhombus
pentagon
parallelogram which is not a rectangle
hexagon
isosceles triangle



California in the 21st Century

Summer School for High School Students
July 11-24, Westmont College, Montecito

You are invited to participate in an exciting new CAG-sponsored summer program for 100 students who will be in tenth or eleventh grade in the Fall of 1993.

Students will explore the factors which will shape our lives into the next century. Topics to be considered are

- Political Implications of Cultural Diversity,
- Global Economy,
- Technological Upheaval, and
- Impact of Cultural Diversity on Society

Course work will be supplemented by numerous guest speakers and reinforced by student work on projects. It will be two weeks of intensity as students meet other bright and motivated students from throughout the state to explore the topics at hand. They will use the resources of Westmont College to prepare presentations and projects to share with the other students and to take back to their home communities.

The program will begin on Sunday after-

noon, July 11, and will conclude on Saturday, July 24. The inclusive cost will be \$800, for the program, lodging, and meals. Limited need-based scholarships will be available.

The campus is a beautiful wooded and secluded enclave near Santa Barbara. Transportation to Santa Barbara will be at the expense of the student. Arrangements will be made to meet students at the train or airport, if they are arriving by public transportation.

The staff will consist of Administrator Ann Cierley, four teaching faculty, and eight dorm and student life counselors. Students will be selected based on their transcripts, a letter of recommendation, and the student's statement of interest. Geographic, ethnic, and gender balance will be sought.

If you would like to participate as a faculty member or as a student, applications are now being received. Interested faculty members should contact Ann Cierley at 805/871-8950. Students should request registration materials from the CAG office at 818/888-8846. Further information will be available at the CAG Conference.

Math in Motion: A Hands-On Creative Approach to Teaching Mathematics in Elementary Schools Using Origami

by Barbara Pearl

I hear
and I forget.

I see
and I remember.

I do
and I understand.

Chinese proverb

Math in Motion is a "hands-on" creative approach to teaching mathematics in elementary schools using ORIGAMI, the Japanese art of paperfolding. "Ori" is the verb to fold and "gami" (kami) is the noun for paper. Paperfolding is traced back over 1,000 years ago to China and parts of Europe. The Chinese, who invented paper, used it to decorate their temples and shrines. Because paper was so expensive it was reserved only for the emperors and ruling class. However, as paper became more available origami travelled through Korea and then into Japan. Its roots stretch throughout the Asian continent. Famous European paperfolders include Leonardo Da Vinci and Charles Dodgson, better known by his pen-name of Lewis Carroll, the author of *Alice in Wonderland*. Dodgson was also a mathematician.

Math Anxiety

Do your students come to school excited about mathematics? Is math their favorite subject? Research studies indicate there is tremendous math anxiety prevalent in schools. The percentage is higher among girls, minorities, and low-income families. Many teachers and parents are uncomfortable teaching math and may contribute subconsciously to negative messages and lower expectations. They can help to counter these negative stereotypes and make significant changes in this area by encouraging positive math experiences where students can feel successful. A positive math experience is more important than ever in today's world, because a background in mathematics can open up a world of jobs, career opportunities, and choices for our students.

The illustration of math concepts using origami techniques demystifies math and reduces the fear of mathematics. It is particularly beneficial to gifted children because it stimulates and challenges their imagination and nurtures their creativity. Students get to *feel, touch, and see* the concepts being taught. They are directly involved in the learning process. This creative approach to mathematics develops meaning and understanding through manipulatives that create an exciting, enthusi-

astic math learning environment. Teachers discover special methods to *focus attention and to sharpen concentration, memory, and recall*.

Enter the Fold

From an early age, children should be taught to examine the shapes of the world around them. Origami is related to geometry and invites children to explore abstract concepts. These concepts become *real*. Shapes and forms become part of their mental image of the world in which they live. Origami helps to bridge that gap between words and their meaning. Through the paperfolding process children feel successful and motivated to learn.

Children of all ages are captivated as they discover how to recycle magazines into geometric figures of birds or transform the morning newspaper into a three-dimensional hat. Polyhedrons, puppets, pinwheels — if you can imagine it you can fold it!

Origami is unique because you don't need to use other materials like glue, scissors, tape, rulers, protractors, or a compass — all you need is paper. The technique used is folding. The squares of paper are substitutes for a straight edge and a T square. Origami is like a geometric algorithm, in which you follow a sequence of steps to get the result. With origami, the results are meaningful, concrete, visual, and fun!

Through origami the students also get experiences in sequencing, organization, spatial relationships, listening and following directions, reading diagrams, critical thinking, problem solving, and developing vocabulary and concepts. The teacher can extend the folding lessons by focusing on methods of measuring length, angles, or area; testing congruence; and studying the attributes of plane and three-dimensional figures. Many of these skills can be transferred to other areas of learning. Students feel successful and develop a positive attitude toward mathematics and learning.

How to Get Started

Most libraries and bookstores have a wide selection of books on origami. Many libraries claim, "the origami section is wiped out!" This

popular art form is also a wonderful family activity and a great way to involve families in their children's mathematics education. If you are a beginner, look for books that have some written text. Some of the older books are confusing. It seems as though whole steps are missing (they assume you have a Japanese grandmother at home) and can be frustrating. Start with easier forms such as the drinking cup, boats, the house, whales, and flowers. The skill and confidence gained from previous successful experiences will enable you to visualize the spatial relationships and do more challenging folds. Practice makes progress and if you persevere, the results are worth the effort!

In the classroom you might begin with "the box", instructions follow this article.

References:

Books for Beginning Paper Folders

Lewis, Shari and Oppenheimer, Lillian, *Folding Paper Puppets*, New York: Stein and Day Publishers, 1962.

Sakata, Hideaki, *Origami*, Tokyo: Harper & Row, 1984.

Temko, Florence, *Paper Pandas and Jumping Frogs*, San Francisco: China Books, Inc., 1986.

Math Resources

Engel, Peter, "Origami: The Mathematician's Art," *Discover*, June 1988, pp. 54-61.

Heukerott, Pamela Beth, "Origami: Paper Folding—the Algorithmic Way," *Arithmetic Teacher*, January 1988, pp. 4-8.

Olson, Alton T., *Mathematics through Paperfolding*, Reston, VA: National Council of Teachers of Mathematics, 1975.

Paulos, John Allen, "Innumeracy—Mathematical Illiteracy and Its Consequences," New York: Hill and Wang, 1988.

Sinicrope, Rose and Mick, Harold W., "Multiplication of Fractions through Paperfolding," *Arithmetic Teacher*, October 1992, pp. 116-121.

Skolnick, J., Langhort, C., Day, L., *How to Encourage Math in Girls*, Palo Alto, CA: Dale Seymour Publisher, 1982.

National Organization

The Friends of the Origami Center of America, 15 West 77th Street, New York, New York, 10024; 212/769-5635. Membership includes newsletters, annual convention, special events, lists of regional groups, and resources.

Barbara Pearl directs *Math in Motion*, which presents assemblies, student workshops, and staff development training programs. Directed toward the elementary student, these programs demonstrate how to incorporate origami across the curriculum and get students to think, talk, and write math. She says, "After a program, I observe children folding the models, experimenting with everything from notebook paper to scraps, challenging themselves to create different sizes, studying the intricate patterns they unfold, and exclaiming, 'I did it! I didn't know math could be so much fun! Teach us more!'"

Math in Motion uses paper folding as a tool that draws children into the world of learning. Origami takes a form so appealing that students are eager to learn. Ms. Pearl's vision is that *Math in Motion* will be a part of every student's experience. The program teaches patience, cooperation, precision, and an appreciation of other cultures. *Math in Motion* supports the California Mathematics Framework. It is designed to inspire student interest and mathematical understanding. The greatest value of the program is that students develop a positive attitude towards mathematics and feel successful.

Ms. Pearl says, "I believe that the negative association about mathematics is not *what* we are taught, but *how* we are taught. I hope you will open your minds and hearts and explore this creative teaching approach. You will discover some effective ways to revolutionize your teaching! An exciting, cultural, educational, and entertaining experience awaits you and your students. Perhaps there is a budding scientist, astronaut, or robotics engineer sitting in your classroom. Enter the fold with the lesson which follows and...*may the fold be with you...*"

She invites you to write and share your experiences.

Featured on national television and in the L.A. Times, Barbara Pearl has presented at educator's conferences for CAG, Mathematics Council, and the California Association for Bilingual Education. She is currently writing a book. For a brochure and more information, send a SASE to: *Math in Motion*, 2417 Vista Hogar, Newport Beach, CA 92660; phone: 714/721-0633.

An Origami Math Lesson...The Box

Objectives:

- To develop auditory and visual attention skills (listening and following directions)
- To develop visual-motor skills (eye-hand coordination)
- To develop temporal-spatial concepts (the ability to understand the position of the self and objects with relation to each other)
- To develop shape and pattern recognition
- To develop sequencing skills (retain and recall information in appropriate order)
- To develop basic geometric principles
- To connect math and art

Strand: Fractions and Geometry

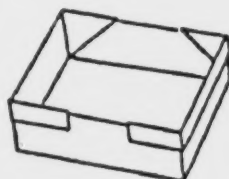
Concepts and Vocabulary:

fractions

whole 1
halves $1/2$
quarters $1/4$
eighths $1/8$
sixteenths $1/16$

geometry

rectangle
quadrilateral
triangle
line of symmetry
parallel lines, perpendicular lines



Materials:

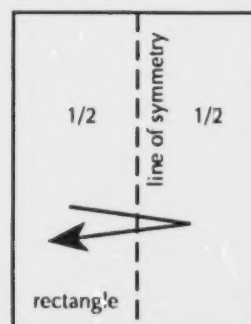
Sheets of 20-lb bond 8-1/2"x11" copy paper (use 2 sheets, one for the top of the box and one for the bottom of the box) This material is ideal because it is easier to write on and see the patterns and shapes in the paper. Notebook paper can also be used although it will be thinner. Hint: Make the top and bottom of the box exactly the same way. Adjust the top of the box over the bottom to fit.

Description:

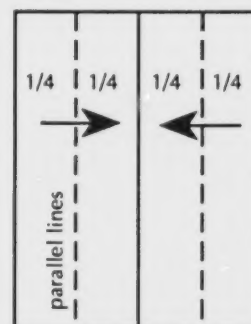
Use the box to teach a lesson on fractions or geometry. Refer to the concepts and vocabulary above. Model the process step by step using a larger sheet of paper. At each step, introduce or review geometric vocabulary and concepts. When introducing or reviewing vocabulary terms have students write the word and its definition on the part of the paper that represents that term. *Having the information go in your ears and out of your hands helps you learn it. When students get to feel, touch, and see the concepts being taught it reinforces learning and enhances memory and recall.* Select a few concepts to teach at one time depending on the abilities and experiences of the grade level you are teaching. However, don't underestimate the ability of the class. Children are more likely to retain information if they are actively involved in the learning process. Try introducing some of the new words like quadrilateral and symmetry to younger students. When children are interested in what they are doing they are curious and respond readily to new material.

***Note:** Each step is dependent on the previous ones. The creases and lines in the paper guide you to the next step. Emphasize the importance of precision and to crease sharply. The more precise students are, the easier it will be for them to follow the steps and the nicer the model will look.

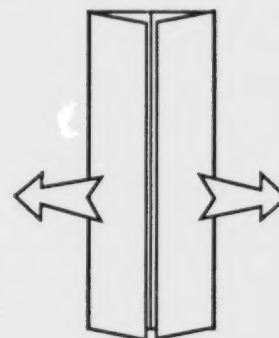
1. Fold in half lengthwise (Book fold). Unfold.



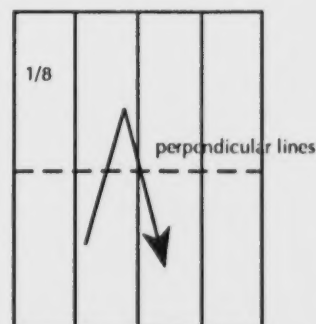
2. Bring longer edges to meet at the center crease (cupboard door fold).



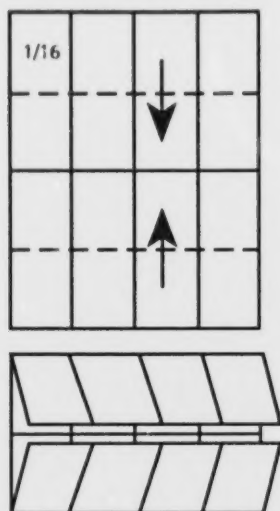
3. Unfold.



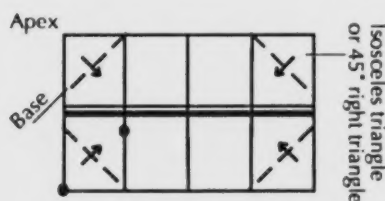
4. Book fold crosswise. Unfold.



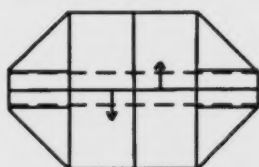
5. Bring the shorter edges to meet at the crosswise crease. This time leave the folds in.



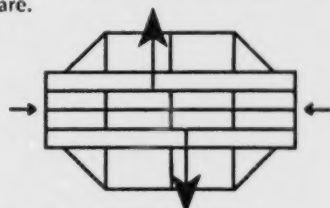
6. At each corner, bring the folded edge to lie along the nearest crease. Note that the cut edges do NOT reach the crosswise center line.



7. Fold the cut edges of the paper outward, one up and one down, as far as you can over the corner flaps to hold them in place.



8. Place a thumb under each of the "hems" just made and pull them up and apart. The ends of the model will fold upward to become the ends of a box. Pinch the corners of the box to make them square.



9. Voilà! A finished box! Make another for a lid.

How to Fold the Box...and related math concepts

There are so many applications for teaching a lesson using origami. The following is a sample of how to incorporate a math lesson using paperfolding. The adjacent figures illustrate each of the steps. During the lesson encourage divergent thinking by asking, "What can we say about the shape we see?" This open-ended question approach encourages students to analyze the figure without the pressure of obtaining one right answer. It enables the teacher to assess what the class already knows about geometry concepts and vocabulary.

1. Fold the rectangle in half lengthwise. Unfold.

What is a rectangle? Another name for a rectangle is quadrilateral. Can you think of other quadrilaterals? When you unfold the paper, the first fold creates a line down the center, called the line of symmetry. The paper is divided into halves. Have students identify and label each part. Discuss or write a definition for the part.

2. Bring longer edges to meet at the center crease.

Identify parallel lines.

The paper is divided into fourths.

3. Unfold.

4. Book-fold crosswise. Unfold.

Identify perpendicular lines.

Each section is an eighth of the whole piece of paper.

5. Bring the shorter edges to meet at the crosswise crease. This time leave the folds in.

The paper is now divided into sixteenths.

How many rectangles can you find?

6. At each corner, bring the folded edge to lie along the nearest crease. Note that the cut edges do not reach the crosswise centerline.

Each fold creates a triangle. This type of triangle is called an isosceles triangle. An isosceles triangle has two sides of equal length. The top of the triangle is called the apex. The bottom of the triangle is called the base. The sum of the angles is 180° . How many degrees are there in each of the angles of the triangles you folded?

7. Fold the cut edges of the paper outward, one up and one down, as far as you can over the corner flaps to hold them in place.

8. Gently fold back the sides of the model and pinch the corners along the seam of the box to shape your model.

9. As quickly as you can count to three in Japanese,
- ichi,
 - ni,
 - san, you have created the box.

Make another one for a lid. Have students sign their models. See additional activities on the next page for follow-up suggestions.

Additional Activities with The Box

1. Measure length, width, and height of the box and then calculate the following:
 - A. What is the area of the base of the box?
 $A = lw$ (Area = length x width). Remind students that area is measured in square units.
 - B. What is the volume of the box?
 $V = lwh$ (Volume = length x width x height). Remind students that volume is measured in cubic units.
2. Challenge students to create three boxes of varying sizes. Experiment with different sizes of paper. Calculate the *area* and *volume* of the box based on the size of the paper used. Record findings in a table and summarize the results. Can students predict how to change the dimension of the box so that the area and volume are increased? Decreased?
3. Make nesting boxes that fit inside each other. Who can make the smallest box? Who can make the widest box?
4. This box was traditionally known as the magazine box. Recycle magazines and travel brochures. Use the front of the magazine for the top of the box and the back of the magazine for the bottom to create more decorative boxes. Display in the classroom or have a school exhibit.
5. Make a handle for the box and staple it to the sides to create a basket. To make the handle, fold the length of a sheet of paper in half, fold it again and shape into a handle.
6. Make a list of all the things you can store inside this box. These boxes could be used to store smaller items like paper clips, baseball cards, hair accessories, gifts, and more.
7. Decorate the box. Use markers, crayons, water color paints, and beads, or make a collage on the top of the box of your favorite things. Encourage creativity. Make two and donate one to a nursing home.
8. Write a poem and glue it inside the base of the box as a gift for someone special.
9. Give boxes as gifts for Mother's and Father's Days.
10. Teach someone else how to make the box.
11. Encourage students to work in cooperative groups and fold the model together. List objectives on the board and ask students to examine the folds and identify as many math concepts and vocabulary terms as they can. Have one student record the observations. After you fold several models together, you can ask students to list all their observations as a review or to reinforce the information. For younger children, the teacher can write down the student's responses on the chalkboard.

A Window Looking In

I am a window
Standing solemnly
Between two worlds looking in from the
outside.

I am blinded by light
Bright as the morning sun
As peaceful as the fall of a single
snowflake
More comforting than a mother's touch.

I see beauty in a way unknown to me.
All is in harmony.
Everything is fresh and new.
Innocence and purity lingers throughout.

I am on the outside.
Around me darkness forms
Darker than a starless night
More painful than a sharp blade.

The wind whistles with chaos and
disorder.
A bird is washed out of flight.
The trees battle the storm
Struggling for life.

Then silence soothes me.
The violent storm calms
Leaving me in quiet thought.
Life is renewed.

At times I wish I was looking out from the
inside.
But when the commotion stops
I realize that this is my home
And here I must always remain.

Kelly Dighero
Bella Vista High School
Fair Oaks

Accelerating in Mathematics: Academic and Social-Emotional Impact

by Terry A. Thomas

Educational acceleration, especially in mathematics, provides many benefits (Brody & Benbow, 1983; Daurio, 1979; Kulik & Kulik, 1984) and is generally endorsed as a useful strategy for gifted students (e.g., Cox, Daniel, & Boston, 1985; Feldhusen, 1989; Richardson & Benbow, 1990). However, the practice is viewed with suspicion by some educators. Resistance is often based on concerns about inadequate mastery of basics (Thurston, 1990) and preconceived notions about negative effects on social development and emotional well-being (Cornell et al., 1991; Daurio, 1979).

Talent Search programs based on the principles of the Johns Hopkins Study of Mathematically Precocious Youth (SMPY) are found in all 50 states and several foreign countries (Stanley, 1991). These programs have as their key elements the identification of academic talent in middle school youth through the Scholastic Aptitude Test (SAT) or similar tests; and development of talent through specially designed, accelerated classes, usually presented in a summer school setting.

The Academic Talent Search (ATS) at California State University, Sacramento is based on Stanley's model, teaching traditional high school mathematics (algebra through pre-calculus) at an accelerated pace to selected junior high-aged students in small groups with similar ability levels. Using methods which fly in the face of contemporary educational trends, these fast-paced mathematics classes have produced very impressive results. Students with identified talent in mathematics have mastered content that is traditionally reserved for older students, and they have benefitted from that achievement. Ongoing research investigating the impact of ATS acceleration confirms those benefits are substantial and long lasting. The purpose of this report is to describe the instructional approach of ATS fast-paced mathematics and to share current research evidence that ATS students gain academically and socially from the experience.

Ability Grouping

Classes are composed of 12 to 15 students who have similar ability levels in mathematics. Students are selected for placement into fast-

paced classes based on several factors, including SAT scores, school mathematics grades, and diagnostic placement test scores. Age or grade level is not as important as readiness. Each instructional team is composed of a teacher and an assistant, a former ATS mathematics student. Team members are selected based on background knowledge in mathematics, and experience. Instructors may be local high school teachers or university faculty. The learning environment is rich in student-to-teacher ratio and in the high levels of achievement expected.

Pace of Instruction

Fast-Paced mathematics classes use a diagnostic-prescriptive model of instruction, which allows students to bypass the unnecessary repetition of content they already know. The Keedy-Bittinger textbooks, published by Addison Wesley, provide diagnostic pre-testing so that instruction can be tailored to individual needs. Students begin by taking an end-of-chapter test, and the items missed refer them back into that part of the chapter for study. Second, third, and even fourth equivalent tests are available to check student progress through the content of each chapter. When all the major concepts in a chapter are mastered to the teacher's satisfaction, the students are directed to the test at the end of the next chapter. In this manner, the pace of instruction is targeted to the needs of the students. Typically, students progress one or more chapters each class meeting. Homework expectations are high, with students studying mathematics two or more hours daily in addition to in-class work.

Teacher's Role

Independent study is not the only strategy. Class sessions are not mechanical, cold, and impersonal. While the teacher's primary role is to guide the students to understand the major concepts, class time is also used to expose students to problem solving and critical thinking activities which promote an appreciation of mathematics and provide opportunities for group interaction. Students are involved in short lectures, discussions, small group tasks, and one-on-one tutoring. Students get to know the instructors and their classmates, and many make new long-term friendships.

Competency Testing

When students complete the topics of a course, e.g., first-year algebra or trigonometry, they take a final test. Upon recommendation of the teacher, the student is administered one of the Cooperative Mathematics Tests (also published by Addison Wesley), with mastery defined as a score in the 90th percentile (using national norms). Mastery scores are achieved by the top ten percent of students who studied the same topics over a traditional 9-month school year. ATS recommends students with scores at the mastery level for credit, grade, and advanced course placement. Students are advised to take their ATS transcripts to their high school for such recognition. Students who show mastery in a course are encouraged to continue into chapters and topics of the next course. Those who score below the mastery level may re-test (on another form of the final test) only after they have reviewed their weak areas.

Over the past 11 years, 1300 mathematics students mastered an average of 1.32 courses in six weeks of study. Some students demonstrated achievement that would require two or more years of traditional mathematics instruction. Do students benefit from this high rate of achievement? Are there negative consequences? The students were surveyed at intervals of four and seven years to determine if they benefitted from ATS fast-paced math.

Four-Year Follow-up

A follow-up research study investigated the impact of this type of acceleration on students, four years after they participated in ATS summer school (Thomas, 1989). As part of this larger study, the 1984 fast-paced mathematics students were mailed a questionnaire in 1988. Completed questionnaires were returned by 56 of the 80 locatable fast-paced mathematics students, for a response rate of 70%. The high school students reported their experiences, academic achievements, and extra-curricular activities since Academic Talent Search participation.

Benefits

The outcomes from this study supported the practice of providing acceleration in mathematics for these students. Students viewed ATS as highly positive four years after participation in the program, and there was no evidence of systematic social-emotional disturbances or other harmful results. Student

achievement in high school was outstanding, with average grades at the "A" and above category in all subjects. Students associated ATS with positive changes in their attitudes toward academic subjects, school, and self. They reported favorable changes in social relationships and emotional stability. The respondents were active in a wide variety of extracurricular activities, and they participated in free-time activities which are typical for the age group. The students had positive self-concepts, viewed themselves as being "in control" of their lives, and had formulated plans for the future, including career goals. They received awards and honors in a wide variety of fields, including sports.

The student comments below illustrate typical reactions to their ATS experiences.

The ATS experience has allowed me to take calculus, not only in my junior year, but at the age of 15! This has allowed me extra time to take classes in English and music.

ATS has helped me realize more of my potential academically and at the same time made me realize that I was not as smart as I thought I was. This helped me not to take my studies for granted ... that the competition in college will be a lot harder.

Seven-Year Follow-up

The same group of former fast-paced mathematics students was contacted seven years after participation in ATS summer school. These mathematics students were part of a larger study of the whole ATS class of 1984. Of the 80 former mathematics students contacted, 55% returned usable questionnaires. All of these students, ranging in age from 18 to 22 years, were attending college.

Outcomes

One indication of academic performance is the quality of universities students attend. These students had been admitted to an impressive array of distinguished universities. Almost half (48%) were attending a University of California campus, 12% were attending one of the California State University campuses, and 28% were at highly selective private colleges including Harvard, Harvey Mudd, Yale, Princeton, M.I.T. and Stanford.

Success in College

These students further demonstrated academic excellence by earning grades averaging "B+" (3.42 GPA) in their first two years of university study. Most students (64%) were pursuing majors in mathematics and related technical fields, including engineering, physics, chemistry, computer science, economics, and accounting. The others had majors that were less mathematics oriented, including business, biology, English, history, foreign languages, and political science. Predictions that accelerated students fail because of inadequate backgrounds were not upheld.

Goals and Aspirations

Students had established challenging goals for themselves. Academic goals were reported in terms of highest degrees expected. A high percentage (44%) of students intended to earn doctoral degrees, 36% were targeting master's degrees, and 17% expected to complete only bachelor's degrees. Career expectations were parallel to their choices of majors. Students reported career aspirations in medicine, engineering, law, and business. Twenty percent of these students indicated intentions of becoming teachers either at the high school or university level. One student was in ROTC and intended to become a naval officer.

Social-emotional

These students were not only high academic achievers, they were also socially and emotionally well adjusted. They were involved in many social activities both in and out of school. They had well defined inner locus of control and positive self concepts. As a group, these students were doing well in those areas beyond the academics.

Student comments included:

I am currently a sophomore at Yale University...ATS gave me confidence in my ability to challenge myself.

I remember feeling quite isolated at times in high school. Coming to Stanford was such a relief. I found a

place where I could actually discuss books and issues with people. ... My peers motivated me to stretch my mind and I discovered I had a lot of untapped potential. The situation was similar to what I went through in ATS: working alongside of other talented students, I found I wasn't necessarily the "best," but I was inspired to achieve much higher levels than I expected for myself.

I had a much better attitude towards doing well in my classes after Talent Search. Now I am over half way through my college undergraduate studies working towards a bachelors degree in mechanical engineering...

Conclusions

Opponents maintain that accelerated mathematics students develop "gaps in their background" which show up later when they confront more advanced topics. Other opponents focus on the potential for social and emotional maladjustment. The ATS summer school provided acceleration in mathematics for small classes of academically talented middle school students grouped by ability. These students demonstrated exceptional levels of achievement in 1984, and have participated in two long-term follow-up studies. Results of the studies show these students have maintained a pattern of excellence in high school and well into college. Students report long-lasting benefits from participation in the ATS fast-paced mathematics program, and there was no evidence of negative consequences, academically or social-emotionally.

References:

- Brody, L. E., & Benbow, C. P. (1987). Accelerative strategies: How effective are they for the gifted? *Gifted Child Quarterly*, 31, 105-110.
- Cox, J., Daniel, N., & Boston, B. O. (1985). *Educating able learners: Programs and promising practices*. Austin, TX: University of Texas Press.
- Cornell, D. G., Callahan, C. M., Bassin, L. E., and Ramsay, S. G. (1991). Affective development in accelerated students. in Southern, W. T. and Jones, E. D. *The academic acceleration of gifted children* (pp. 74-101). New York: Teachers College Press.
- Daurio, S. P. (1979) Educational enrichment versus acceleration, in W. C. George, S. J. Cohn, & J. C. Stanley (Eds.), *Educating the gifted: Acceleration and enrichment* (pp. 13-64). Baltimore, MD: Johns Hopkins University Press.
- Feldhusen, J. F. (1989). Synthesis of research on gifted youth. *Educational leadership*, 46, 6-11.
- Kulik, C. C. & Kulik, J. A. (1984). Effects of accelerated instruction on students. *Review of Educational Research*, 54, 409-425.
- Richardson, T. M., & Benbow, C. P. (1990) Long term effects of acceleration on the social-emotional adjustment of mathematically precocious youths. *Journal of educational psychology*, 82(3), 464-470.
- Stanley, J. C. (1991). An academic model for educating the mathematically talented. *Gifted Child Quarterly*, 35(1), 36-42.
- Thurston, W. P. (1990). Mathematical education. *Notices of the American Mathematical Society*, 37(7), September.
- Thomas, T.A. (1989). Acceleration for the academically talented: A follow-up of the Academic Talent Search class of 1984. Unpublished manuscript, California State University, Academic Talent Search Project, Sacramento.
- Dr. Thomas is a Professor in the School of Education at California State University, Sacramento. He is Director of the Academic Talent Search (ATS) Project and the Accelerated College Entrance (ACE) Center, as well as the coordinator of a Master's Degree program for teachers of the Gifted and Talented. He may be reached at CSUS, 6000 J Street, Sacramento, CA 95819-6098. Phone 916/278-7032.

"You've Picked Out All the Mavericks!"

Reminiscing about the Garden Grove USD GATE program with Jeanne Delp, Mary Ann Patterson, Sharon Clunk, and Mary Ann Price.

That's what the superintendent said to Jeanne Delp in 1961 when she assembled her first group of teachers for the district's fledgling gifted program. That qualification was fine with Jeanne. The whole idea of a gifted program was slightly maverick anyway, so teachers who were interested in doing something different and doing it in a different way were just what she wanted. "Intellectual zest" was her requirement for those teachers, and zest is what has characterized the Garden Grove program from the very beginning.

Jeanne's early experience with gifted education was in 1951. Just back from teaching American military children in Japan, she went to a summer program at San Francisco State on gifted education and went back to her school district eager to get some type of gifted program started at her school. It first took the form of the Friday afternoon "club," activities on Friday afternoons which would stretch and challenge the bright kids.

In 1961 when the legislature promised districts \$40 per child to provide some form of differentiation for gifted students, Jeanne began to set up a program in Garden Grove. The program was to start with fourth grade, so she began by going into every third-grade class in the district, looking at cums, talking to the teachers, observing the kids, and then she made a list of children to be tested. With this pool of children cluster groups were set up within classes, since the superintendent didn't think the community would be comfortable with a pull-out program which would set some children apart. Jeanne began what has always been an important part of the Garden Grove program—meeting with parents. She explained why the children were chosen for these groups and what would happen to them there. She discussed the nature of intelligence and she talked about curriculum. She described the benefits to the child of being a part of this group, and she showed parents how to explain to a child what it meant to be gifted (and what it did not mean!) One of the first rules for parents was "no bragging," and she was very strict about this requirement. A gifted pro-

gram should never be a cause for bad feelings in a school district. She also advised parents not to let the child make the decision whether to be in the program or not. Children, she thinks, do not have the necessary perspective to make that kind of decision for themselves. She then set up workshops to train third-grade teachers to work with these students in their classrooms.

It soon became evident that the need was for whole-day classes for gifted children, and the district felt ready. Jeanne got her "mavericks" together for a six-week summer workshop for intensive training and planning, and it was here that the Garden Grove gifted program was fully realized. The assumption was firmly held that the students must learn all the basic skills, but that they can learn them faster and more easily and then have time for enrichment. An early emphasis was on research and public speaking. Jeanne felt that if kids had all these great ideas, they needed the tools to develop them and communicate them to others. Fourth graders did "morning talks," fifth graders debated, and sixth graders did multimedia "morning projects." In order to have some "special" features of the program, and to enrich the social studies, units were chosen for each grade level. Fourth grade studied ancient Greece, fifth grade the Renaissance, and sixth grade did Shakespeare. The kids absolutely ate up these units, and students return from high school and beyond saying that they will never forget the Greek myths or having a part in a Shakespeare play. Research skills have always been emphasized and taught, with a lot of modeling of what makes a good paper and what makes a bad one. Content/style grades were separate, so the students knew exactly where they stood.

The teachers remember that first year as full of excitement. They met every week ("yeah, we met a lot") to discuss what they were doing and how they could make it better. They invented their curriculum and they wrote units for each other to share and use. They picked ideas out of the air and brought the world into the classroom. Shortened versions of Greek

tragedies and Shakespearean plays were performed, and dramatic productions have become a tradition in Garden Grove. They tackled art and music appreciation. They went beyond the basic reader and used paperbacks to teach reading. They wrote their own reading contracts for the books, and the students stretched their thinking powers with these contracts. They analyzed characters, wrote new chapters for books, did research about some part of the book, made maps, used new vocabulary in creative ways, and above all, they read *real* books for reading. Literature-based reading has always been a part of the Garden Grove gifted program, and it is a thing that the students and their parents remember with special pleasure. Those teachers remember the joy of having the freedom to be flexible and innovative in curriculum, but they all emphasized that a firm structure was at the base of the program. There was a sense of continuity from grade to grade and unity in the overall program. These are still strong features of gifted education in Garden Grove.

What is it that has made Garden Grove successful for so long? Jeanne Delp and the teachers who have seen their program educate a generation of bright kids are unanimous about what it takes to make a program last. First is a specific philosophy that all the teachers understand and support, a firm basis for the direction of the program. Next is a definite curriculum, one that has been carefully delineated and has specific objectives that everyone is working toward. Good communication with parents is vital and needs to be on-going. Parents must understand their children and the goals of their children's education. They must feel comfortable enough to ask questions and to seek problem solutions. The Garden Grove parent support group has become very active over the years and plays an important role in the program. GATE parents are good advocates for education. Finally, the coordinator for the GATE program should have GATE as her only responsibility, and built into the coordinator's role is active supervision of the program, to assure that long-term goals and objectives are being accomplished. Equally important, says Jeanne, the initiator of the program should never make it "my" program; it is "our" program, the district program.

Thinking ahead through the 90's, Jeanne says the basic question remains, "What is essential for the bright mind to know?" She

underlines the same basic needs that were evident in 1961—competency in skills and the ability to communicate not only in speaking and writing, but in creative ways. The diversity of cultures evident in the society of the 90's brings a need for the development of skills in the arts of negotiation, persuasion, and discussion—skills our brightest students can learn and use effectively. Expertise in using the tools of technology is also a must for gifted students.

With a firm foundation and a proven record of accomplishment, Garden Grove is ready for the 90's and beyond.

Weavings in the Heart of the Young

The face
A tapestry of heritage,
Woven by the Master Artist.
Tough, leathery skin,
Stained by the sun,
Lines engraved by the sands of time,
Each with a story of long days of labor,
Twisting and winding over the surface,
Changing with each expression.
Eyes,
Pools of blue and gray,
Reflections of the sky,
Lost in the deep canyons of age,
Swimming in memories of youth,
Drifting across a sea of pain,
Reaching after a small piece of a star,
A dream lost in the pages of the past,
Big tired hands
Caressing skin that tastes and smells of
youth,
Gazing into the heart of a child,
Relating the legacy,
Retelling the story,
With a passion of urgency,
Wishing and praying for one more day,
To run against the wind,
One more chance to truly live.

Anna Carlson
Bella Vista High School
San Juan USD, Sacramento

"We Need to Teach Students to be Risk Takers."

A Conversation with Cynthia Rathwick

Cindy Rathwick, GATE Coordinator for Fresno Unified School District, considers herself a missionary for gifted education, because "I was one of those who was saved." She remembers the cloakroom, where she found herself "constantly in some difficulty or another." Two sixth-grade teachers decided that a challenge rather than more discipline was what this gifted girl needed, and the challenge worked. Though she describes her education as a serendipitous adventure, she became a serious student who couldn't get enough school, and school has become her life. Special education had been her field for many years, but when Fresno needed fresh leadership in its GATE program, Cindy was recruited. She had been effective in community-district conflict resolution during desegregation work in Fresno, and the district administration was persuaded that she'd be a good person to work with parents and teachers in a program that had its "ups and downs" in the district. The energy that fueled a rebellious student in Baltimore is now helping San Joaquin Valley children reach their potential.



The Most Important Issues Facing Gifted Education

We must be courageous enough to stand together and support the right of every child to an appropriate education. We have grouping for bilingual students to address their instructional needs. We have grouping for LEP students, and it's absolutely to be respected and fought for. We have grouping for special education, and we need those programs. Why on earth do we not support the right of every child with special needs to receive an appropriate education? I think that's probably the most critical issue facing us right now. If we can convince people to respect the right of every child to receive an appropriate education, I think American schools will flourish, and I believe that public schools of choice will be an enhancement in reaching this goal. Our school district allows transfers when parents cannot find the program their students need at their

assigned school. Increasing numbers of principals are asking for GATE/Advanced Learner programs in their schools; and overall, gifted education services are in greater demand than ever before.

We must "cast a wide net" and open our arms, hearts, and minds to include many, many more students who come from diverse fields of experience. At the high school level more GATE, Honors and Advanced Placement classes are needed. Increasingly, teachers and principals realize that we can't address the needs of all special-needs children in the regular classroom. They are seeing that children who are very bright need to do more than be the teacher's helper or be assigned extra work; they need a challenging curriculum throughout their school day.

I believe that because of the range of student needs in our classes, the gifted child in the regular classroom may sometimes receive the least amount of directed teaching time. Teachers want to give their time to the kids who are barely making it and see that they have the survival skills needed to learn and grow. But how unfortunate it is that some of our other children may be feeling that they are out there on their own in their little rowboat going for it across the Atlantic. We need to make sure that **all children have support to reach their academic destinations.**

When I was special education coordinator, people would look at me and say, "Cindy, you're to be admired for your work." I had more sympathy than you can imagine. Within two weeks of my becoming the GATE coordinator, I felt as though I was the least sympathized-with person in the Fresno Unified School District. In gifted education, the trouble is that you can't always see a beautiful mind going to waste, and too often no one notices the very capable student who drops down and drifts, or in fact drops out of school altogether.

We must recognize the fact that the students themselves, especially in high school, don't always think it's wonderful to be smart; and we must strive to personalize our educational messages to students. About 10 or 12

years ago, three forensics teachers took a dramatic step in order to recruit high school students into more challenging GATE, Honors and Advanced Placement classes. They took a song title called, "It Ain't Cool to be Smart," and added in bold letters — "WHO Says So?" Inside, the brochure talked to the students about the advantages of a GATE education. It was an attention-getting device and a very effective recruiting tool.

I believe that when you have a strong gifted education program you uplift your entire school and your entire district. In this era of school-based management, how do you start a program at a school site? If we assist in a non-threatening way by listening and are absolutely non-defensive, the teachers who may start out being reluctant will eventually agree to begin a program at their school. I like to talk to faculties in small groups, and encourage them to ask me everything they've ever wanted to know about gifted education but were afraid to ask. Too often, the question arises, "What happens when you take away the cream of my class?" What really happens is that we allow all of the other "cream" (students) to rise to the top because we reassign those who may have developed a false sense of their own ability in a less rigorous environment. By placing gifted students together, they find out that, "Whoa, there are other very advanced kids out there. Now I need to work harder and smarter!" They learn an important real-world lesson in challenge and an entirely new layer of leadership develops in our mainstream classes.

Finding Gifted Kids and Measuring Results

The kids are here in bigger numbers than ever, and they're as bright as ever. In fact, they just may be brighter than ever because so many have had to work in a complex and sometimes threatening society to get where they are now in school. When I hear a teacher say, "I don't have the students to work with that I used to have. The kids are not as smart," I strongly disagree. We need to work to discover how we can better serve children who come to us from a world of varied experiences. We all need to do a better job of teaching to our new age students, but the talent is there. For instance, in Fresno Unified, our Advanced Placement success grew from approximately 60 AP exams passed in 1979 to approximately 700 passed in 1992; and Fresno Unified is a district where nearly 50% of the students receive AFDC (Aid

to Families with Dependent Children).

We cast a very wide net in searching for children who would benefit from gifted education and changed the way we looked for gifted children. We stopped using individual IQ tests 12 years ago, and instead we informed and listened to the teachers. We asked the teachers to complete a student profile and to tell us who has the most sophisticated sense of humor, which student gives the most thoughtful arguments, which student comes up with creative solutions — and not to focus on the negative. So in Fresno we have a multidimensional approach to identification, which includes achievement scores, an assessment of reasoning capabilities, and a heavy dose of teacher observation, judgment, and recommendation. If you wouldn't want your doctor to diagnose your problem by using only a test and another objective test to pronounce you cured, why would anyone want to decide on appropriate educational placement and measure student success in such a simplistic manner?

We identify at least 7% of our population, and we include large numbers of others who are not identified in what we call the "Continuing Assessment" category. Some schools offer GATE as young as first grade. To be able to succeed in an AP class in high school and be able to write in the magnificent way necessary to score well on college exams, a student needs to be challenged from the very earliest age possible. In situations where students don't demonstrate high potential until their high school years, outreach, coaching, and tutorial programs can help them succeed in advanced classes. In our district high schools GATE, Honors, advanced topics, and AP classes are open to all ambitious students, and our AP success is above the county and state averages.

The Best of all Possible GATE Programs

If I could have anything I wanted, I think it would be a place where there were special programs for the special needs of every kind of gifted student. For instance, there would be schools of emphasis with performance-based character education and academic excellence being critical components of all of the curricula. **Instruction must be connected to the real world in which our students live**, which is definitely not the 50's! Some students might go to these specialty schools just part of the day, and their test scores would be credited to their home school, making magnets more welcomed

by the entire community.

Another dream would be to have K-12 schools as well as K-4, 5-8, 9-12 schools in a non-graded environment. University courses would be brought onto the campus, so students could work at the level for which they were ready—what one Des Moines GATE educator called “a seamless curriculum.” We need to let go of grade levels. In Fresno Unified, once a student is in high school, she/he can take any class that does not have a specific prerequisite, regardless of age. That’s very exciting. We need to have more faith in students’ abilities to select what they can handle and what they cannot. Many of our students need subjects

several years earlier than they are traditionally taught in high school. Appropriate, creative counseling can help. I would definitely have non-graded programs with more team teaching and teachers encouraged to specialize from first grade onward.

We need to have classrooms where students are encouraged to be risk-takers and where they know that it’s okay to fail. When we started our elementary GATE program at grade four, we noticed that the students were cautious about raising their hands because they wanted to have the right answers all of the time. In GATE, they were with all these other bright students and they were reluctant to take the risk of being wrong. When we opened the program in grades one and two, we found that these younger students were bolder, unafraid of making a mistake, of not being perfect. We teach the children that it’s perfectly fine to take risks. We work very hard at saying, “That’s a very interesting answer. How did you arrive at that answer? Might there be other answers?”

ON THE LIGHT SIDE

by Jean Watts



“Since passion is the best predictor of future promise, we had no problem choosing this year’s winner...”

Parent Empowerment is Vital

I have often been accused (justifiably) of being a very strong advocate for parents. I believe that parents are critical to the success of any GATE program. Parents know their children’s needs and they can be our greatest advocates in our districts and the state capitol. Fresno Unified has a GATE parent empowerment conference annually, at which parent and school representatives work together to discuss the Big Ideas for the year. They also work in school pyramids (K-12), so that elementary, middle school, and high school can connect, align, and articulate. With school site councils becoming increasingly powerful groups, as they should be, the secret to the success of gifted education in a district may be determined by the way we present the needs of our children to the community.



After 35 years as an educator, Cindy Rathwick is still a missionary, and it’s characteristic of her to say,

“If we are to be successful in our quest to equip our students with great character and a solid educational foundation, we must respect and listen to the joyous voices of hope and wisdom within all of us and realize that The Children Are Our Only Future.”

In this issue of the *Communicator* I begin a series of articles which share examples of how classroom computers can be used to meet the needs of gifted students. I will try to select lessons and strategies which can:

- be successfully used in both self-contained and heterogeneous classrooms, and
- provide opportunities for differentiating the curriculum.

These articles will feature software that facilitates the development of problem-solving skills and that gives students control over their own learning by making learning a process that is independent, individualized, interactive, interdisciplinary, and intuitive. The lesson plans detailed or reviewed will be those judged likely to cultivate an environment which promotes student control, and which concurrently promote the development of "gifted behaviors," exhibited in student products showing a high degree of organization, resourcefulness, complexity, in-depth understanding, and a logical presentation of research to support ideas.

Featured this month is *Space Station Alpha*, a classroom simulation based on the future colonization of another planet. This unit was developed by Greg Butler in association with Microsoft Australia, and is distributed by ISTE (The International Society for Technology in Education). The eight lessons contained on the disk use all the components of Microsoft Works, and provide an especially appealing approach to the introduction of the data base and spreadsheet applications.

Most computer-using teachers are comfortable with word processing, yet many shy away from teaching the data base and spreadsheet because they seem intimidating. The files on *Space Station Alpha* (SSA) come with prepared data bases and spreadsheets which allow students to gather, assess, and manipulate information. In each lesson are suggestions for enrichment and follow-up for the class, group, or student who wants to extend an area of study. Also included are resource pages containing information from NASA about space

flight, and a data base of science fiction book titles. The lessons are appropriate for use with students grades 7 and up. Group work is encouraged, and there are several away-from-the-computer activities, so that the program can be utilized in a one-computer classroom.

Anyone who wants a copy of the disk can send \$6.00 to ISTE/1787 Agate Street/Eugene, OR 97403-1923. Or you can mail me a disk and I will make you a copy for the Mac. Please only send one disk per school. We are free to make copies, but may not sell the program. My address is Terrie Gray, 461 Tiger Tail Lane, Paradise, CA 95969.

Preparation Time: Moderate—to prepare Student Handouts and Student Data Disks

Skills Needed: Students need to have mastered basic computer skills.

Lesson Time: Varies according to depth desired. The author of SSA expects that teachers will use the program as a basis for designing an activity for 6 to 8 weeks.

Equipment: Any Macintosh or DOS computer which has Microsoft Works

Material: *Space Station Alpha* Disk, the Teacher's Instructions in a Printable file on the disk, and the Student Handbook which each teacher prints out from the disk and copies.

Curriculum: The kit is developed around the themes of Colonization, Survival, and Space Exploration. The activities could be developed in conjunction with social studies lessons or science lessons on space or the environment.

Grade levels: 7 and up

Objectives: Students will become Information Managers as they develop skills in using the computer tools that manage word processing, data base, spreadsheet, and communications applications, to help them collect and interpret information, make decisions and present findings.

SPACE STATION ALPHA

The Lessons

1. In the introduction, students are informed that they were chosen as delegates to a meeting of the Future World League in Geneva, Switzerland, in the year 2010. In that meeting, all member nations agreed that a team needed to be sent to colonize another planet to relieve the pressure on overcrowded and resource-depleted Earth. Fortunately, the students are selected as pioneers for this venture. Unfortunately, there is a malfunction with the Molecular Transporter, and no one knows where they are sent. Thus, the Mission: to identify the planet, determine which crops can grow there, and how many humans can be supported.
2. Each team is given a Planet Report containing information gathered by planet-surface measurements of temperature, diameter, distance from Earth, and number of moons. Students are to compare those findings using the Record Selection function in a prepared data base of planet information to determine which planet is the one on which they landed.
3. Using the information about the team's planet gathered in the previous lesson, students are to use the Food Selection data base file to find out which plants will grow. Then, they are to experiment with the Food Planning spreadsheet to create a garden of a specific size that produces the most nutritious and plentiful yield possible. Because the amount of food produced is dependent upon climate, students are to calculate how many colonists can be supported per dome. (The program gives feedback to the students so they know if they have a less-than-acceptable variety of food: the spreadsheet will tell them it may support only 0.25 people! The most successful student team I worked with could support 16 people, but they would have had to eat a lot of pumpkins...)

Food Selection (DB)	
Food Name	Asparagus
Sowing Method [Seed or Sow Direct]	D
Area Required Per Plant/Animal [sq m]	0.300
Time Till Producing [Weeks]	20
Climate [1 Cool 2 Temperate 3 Warm]	2 or 3
Yield Per Plant/Animal [Food Units]	0.50
Notes	Hardy plant that will do well in most soils.

The final activity in this lesson requires students to create a keyed map for their garden.

Food Selection (DB)						
Food Name	Climate	Yield Per	Sowing	Area Req	Time	Notes
Beans	1 or 2	2.50	D	0.100	11	Climbing beans
Beetroot	2	0.25	D	0.020	11	One of the easiest
Broccoli	2 or 3	3.00	S or D	0.250	14	Highly nutritious
Brussel Sprouts	3	6.00	S or D	0.400	18	Easy to grow but
Cabbage	2 or 3	4.00	S or D	0.250	12	Nutritious, high
Capsicum	1, 2 or 3	1.00	S	1.000	24	High vitamin C
Cauliflower	3	4.00	S or D	0.300	20	Must have fertile
Corn	3	4.00	D	0.125	14	Stalks can be used
Lettuce	1, 2 or 3	2.00	S or D	0.050	10	Needs well drained
Onions	1 or 2	0.25	S or D	0.040	10	Useful plant. Can
Parsnip	2	0.25	D	0.015	19	High yield from
Peas	2	2.50	D	0.050	15	Good winter crop

Food Planning (\$\$)				
	A	B	C	D
8				
9	Food Name	Number	Area Used (sq m)	Yield (Food Units)
10	Asparagus	5	1.5	2.5
11	Beans	15	1.5	75
12	Beetroot	10	0.2	5
13	Broccoli	10	2.5	30
14	Brussel Sprouts	10	4	30
28	Turnips	0	0	0
29	Chickens (Pair)	2	120	300
30	Goats (Pair)	2	200	800
31	Cow	1	600	1200
32				
33	Totals		1009.95	3347.50
34			Area Used (sq m)	Food Portions
35				
36		Number of people garden would support: 1.02		
37				

- The information from lesson 3 is used as students decide how much of the planet is to be devoted to populated areas and how much to wilderness. The team members enter a proposed ratio into the Planet Population spreadsheet, which automatically calculates how many colonists would be able to inhabit the planet. In this activity students are directed to print out bar and pie charts.
- Students prepare a Declaration of Colonization or a Warning Against Colonization using reports from the previous lessons.
- Students write a constitution for their new planet, using the word processor for drafts, revisions, and final copy.
- Each team designs a flag for the new planet (non-computer task).
- Telecomputing Declarations: Teams use the Communications application and a modem to transmit the word processor file that contains the Declaration or Warning from task 5 to another classroom. Ideally, the recipients would also be working on the project so students could compare notes.

Pride

He visits you when you get an "A" on a test
 He visits you when your team beats the best
 When you get a compliment you feel him inside
 This emotion is not easy to hide.
 When you help someone with their work
 Inside you, this feeling does lurk.
 So when you're feeling down, don't let this feeling subside
 Remember always, this emotion called PRIDE.

Catharine Corpuz
 Moorpark High School

After the simulation is complete, students will be capable of adapting the prepared files for their own use—to demonstrate the effect of European colonization of the Americas, to write a constitution from the Native American's point of view, to chart the effectiveness of fictional colonization efforts, or to calculate the effect of a toxic spill on wildlife species. *Space Station Alpha* is just the launching pad, and the possibilities are endless.

Terrie Gray is the Parent Representative for the Mount Shasta Region on the CAG Board and can be reached at 916/877-5141.

Barbara Graham's Animal Classroom

by Barbara Graham

As a sixth-grade teacher for the Manhattan Beach City School District in Manhattan Beach, California, I teach math, science, and literature. I am committed to teaching with the concepts of whole language, themes, and integration of subjects, and with the strategies of active learning, cooperative learning, daily and extended investigations, and authentic assessment. I feel strongly that children should write in all subjects and that skills can and should be taught in the context of the theme and the assigned writing. Borrowing the phrase "learning to write, writing to learn," I teach to the premise that



students learn to write by carrying papers through all steps of the writing process from first draft to final copy. I feel that students write to learn and cement their learning by sharing their thoughts, feelings, and knowledge through a variety of writing strategies and by writing for many different audiences.

I teach in a heterogeneous classroom with a wide spread of abilities. Gifted and Talented Education (GATE) students share my room nine out of every ten days. One day every other week they attend a qualitatively different GATE program. ESL students and the less capable students succeed well in my program because of the active learning, the "hands-on" investigations, and the highly motivating and univer-

sal bonding with the animals, which are an integral part of the classroom. The more capable students and, in particular, the GATE students are challenged because the investigations and written assignments are all open-ended and give many opportunities for higher-level thinking and for connections, elaborations, and extensions. My evaluation of assignments is authentic assessment of portfolios showing the performance activities the students engage in over a period of time.

This past October I spoke to Sandy Kaplan's and Sara Content's student teaching classes at USC about how I accomplish my teaching goals with the help of the animals which share my classroom. Sandy asked me to share my program with the readers of the *Communicator*.

I love and respect animals and have observed over the years the closeness which children feel towards animals, and their curiosity about them. I became convinced that animals could have an important role in a classroom, and decided to involve them in the math investigations, science themes, and literary works I use in my classroom.

For the past seven years, I have taught directly with animals by maintaining an Animal Classroom. This enables me to teach with an integrated whole language animal theme - "Animals as teachers and learners." In math and science, students observe, weigh, measure and graph the growth of animals. They learn about the geographic locations, ecosystems and biomes of various animals, and they study the heredity and genetic traits of animals. Students, in the role of mathematicians and scientists, write to the animals about what they are learning in class. In literature, students are immersed in novels and poetry which include animal themes, and they express their thoughts and feelings about the values we encounter in the literature we read. They read a variety of factual material about animals and categorize the information gained from their reading. In fine arts students study drawings, paintings, and sculpture, and analyze the artists' depictions of animals. Above all, they care for and love the animals in our room.

In the classroom, we have had mice, rats, hamsters, guinea pigs, tadpoles, frogs, toads, anoles, iguanas, snakes, turtles, hermit crabs, tarantulas, goldfish, fresh and salt water tropical fish, and birds. The students learn about the classes of vertebrates and invertebrates within the animal kingdom and the place of each of the classroom animals within these classes. They study thoroughly the characteristics and behavior of the animals sharing the classroom.

Each student writes an elaborate report about a particular animal which could live in a classroom. Each becomes a specialist about the animal chosen and teaches the class about its characteristics, development, and needs. The report includes a study of the geographic and ecological needs of the animal and a discussion of reproduction and heredity.

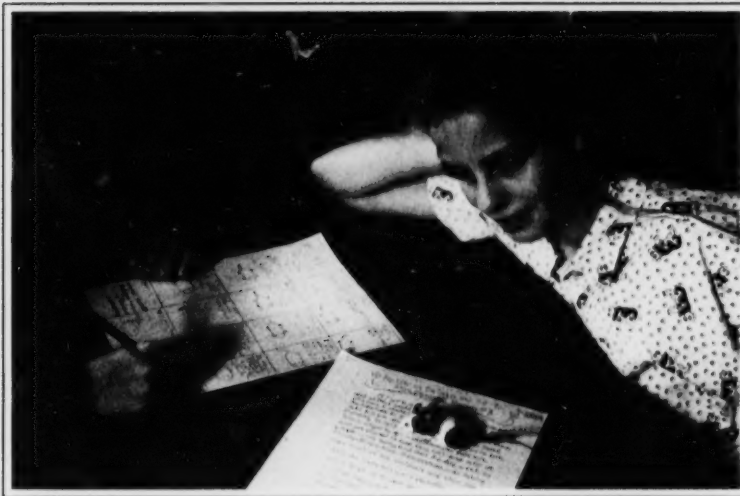
We very carefully and selectively breed mice, rats, hamsters, or guinea pigs. The stu-

about the dominant and recessive genes handed down from the parents to their offspring. Students discuss other possible breedings which would give us interesting data about genetics.

Students read novels which are about animals or that involve animals in their themes. One of my favorite books to study with a class is *The Secret Garden* by Frances Hodgson Burnett. A major theme of this classic is the development of character through relationships. A very contrary Mary grows through her relationship with the invalid Colin and the magical Dickon. Dickon has a special closeness with animals that allows him the privilege of knowing where the foxes hide their cubs, where the robins lay their eggs, and where the wild things have their holes. Through Dickon and the animals, Mary learns to feel emotions and share her new-found feelings with Colin and Dickon. The value of closeness in relationships transfers to the students in their relationships with the animals and with each other.

One particular passage from *The Secret Garden* has a beautiful description of the seeds, flowers, and animals in the garden. Focusing on the colorful language in this passage, I have the students visualize what they read and draw what they visualize along with a favorite line or two from the passage. One child drew seeds "planted as if fairies had tended them." Another drew "strange busy insect things running about on various unknown but evidently serious errands...a mole throwing up its mound at the end of its burrow...." The images become vivid as students write the author's words and interpret them artistically.

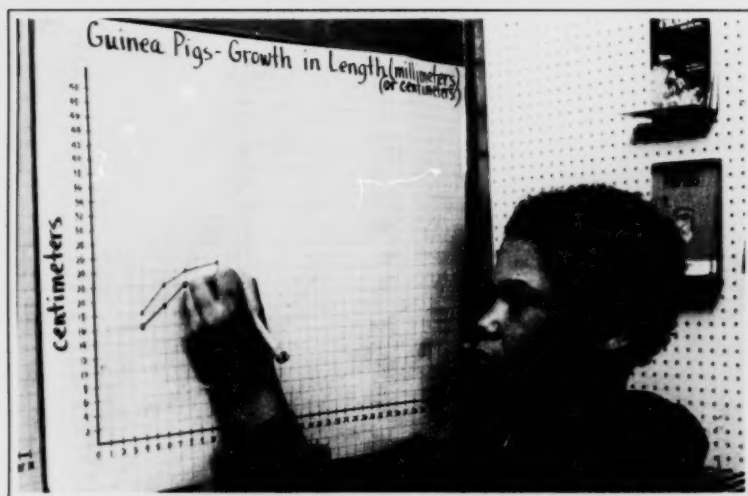
Another favorite novel in *The Incredible Journey*, by Sheila Burnford. A Siamese cat, a Labrador retriever, and a bull terrier embark upon a 200-mile adventure to be reunited with their family. Themes of this classic story include loyalty, dependence, persistence, courage, and survival. Students learn the "personalities" of the three breeds, their abilities and strategies for survival, and their weaknesses. They become absorbed in the story and search with the animals for their owners. We talk and write about survival and the need for loyalty, dependence, persistence, and courage in many of life's adventures. Students learn much more from animals than just information about animals.



dents learn about the nutritional needs of a pregnant animal and observe the mother both before and after the birth of her offspring. The students keep a folder on each new litter, and when the babies are born, each child writes out a birth certificate. Students diagram the babies' development daily and write about their behavior and growth. They weigh and measure the babies in grams and centimeters and chart their growth, and learn to analyze these measures statistically, interpreting information on a graph. The students compare the appearance and behavior of a newborn baby animal with that of a newborn baby human. As the babies develop fur and markings, we compare mother, father, and babies and hypothesize

We also read and learn to recite poetry about animals. The class loves "Mice" by Rose Fyleman. It states so clearly the attitude we have toward mice:

*They nibble things they shouldn't touch,
And no one seems to like them much,
But I think mice are nice.*



A more serious poem we study is "The Beasts" from Walt Whitman's *Leaves of Grass*. It appears as the introduction to *The Incredible Journey*. The poem contrasts Whitman's views of animals' needs and desires with those of man. Reading this poem lead easily to various analytical discussions of values, including one regarding the ability to feel contentment with one's surroundings and one regarding man's need for material possessions. After discussing the vocabulary and interpretation of this difficult but very significant poem, students respond to their favorite lines through words and pictures.

Observing the seeming contentment of a guinea pig lying peacefully in its cage, one student responded to Whitman's line, "I think I could turn and live with animals, they are so placid and self-contain'd, I stand and look at them long and long." She drew a sensitive picture of a guinea pig lying under a rainbow with a kitten lying contentedly atop the rainbow and wrote,

"I think the poem makes sense. Animals are very content. I think guinea pigs are the most content out of all beasts. It's too bad we can't be more like animals. Then there would be peace in the world once more."

Another student responded to Whitman's line, "Not one is dissatisfied, not one is demented with the mania of owning things." She drew various articles of clothing and a car, each with a line through it. She wrote,

"I completely agree with this. It's true animals don't have to worry about how they look or how they act. Sometimes I wish I was an animal. No worries. Just be yourself. They don't care what they have or what they want. When you're an animal, you're just a plain old general animal."

Students love to write to and about the animals. Students write and solve original math problems about animals, paralleling the concepts we are currently studying in class. When I make up a math test, I often include situational problems about our animals. Students write letters to the animals telling them what they are learning in various subjects. They write essays from the point of view of an animal living in our Animal Laboratory. They write poetry about the animals and do art projects about animals which are usually a part of their research report. They study learning theory and teach the animals to run mazes. They do observational experiments to learn the various food and sensory preferences of the animals. They study inventors and construct clever inventions for the animals. Skill development in language arts and other subjects is taught as necessary and relevant within the context of students' writing.

The students are responsible for the care and feeding of the animals. Periodically throughout the year and at the end of the school year, I give animals to very excited students to care for as pets. Students love and respect the animals in the Animal Classroom as I do, and many children stay after school to play with them. The animals fill a void in the lives of many children. With the help of the animals living in my room, the learning that takes place is very real.

Barbara Graham reserves the copyright for this article and the photographs used to illustrate it. She may be reached at 1422 Second Street, Manhattan Beach, CA 90266.

Fast-Paced High School Science for the Academically Talented: A Six-Year Perspective.

by Sharon J. Lynch

This article is excerpted with permission from the Gifted Child Quarterly, Volume 36, Number 3, Summer, 1992. Please refer to GCQ for the full research results.

Introduction

Interest in accelerated classes for gifted and talented youngsters seems to have been rekindled, especially in light of the ability grouping controversy (Hallinan, 1990; Robinson, 1990; Slavin, 1990a, 1990b; Welsh, 1990).

This paper discusses a program of educational acceleration in high school sciences at a special summer residential program for academically talented youth, initiated in 1982 by The Johns Hopkins University Center for the Advancement of Academically Talented Youth (CTY). These courses were designed to teach introductory high school biology, chemistry, or physics to highly motivated, academically talented students 12 to 16 years of age. The courses were taught during the summer over a 3-week period. Students lived on a college campus and took only one course. The total amount of formal instructional time allotted for the fast-paced science courses was 82.5 hours. This differed dramatically from the 135 to 165 hours or more per course provided in most high schools.

Background

The basic premises underlying the courses for talented youth at Johns Hopkins (Durden, 1987) are that these students:

1. Should have an opportunity to fulfill their intellectual aspirations, regardless of the age at which their abilities first appear.
2. Should be allowed to advance educationally according to their individual rates of learning and levels of performance.
3. Usually learn best through appropriate curricula organized to respect a natural sequence of learning.
4. Should not be inhibited by inflexible, artificially framed curricula and unimaginative management of students' time that restrict students' motivation and thirst for learning.
5. Will best advance and mature in knowledge through full and creative use of available resources, both in school and out.

There is strong evidence that these academically talented students, when they first participate in CTY programs as 12 to 13-year-olds, have already attained the level of cognitive development—formal operations—required for the high school sciences (Keating, 1975; Keating & Schaefer, 1975; Rogers, 1986). The minimum Scholastic Aptitude Test (SAT) scores for 12-year-olds seeking admission to CTY courses were equal to the mean scores of college-bound high school seniors—a score of 500 or more on the SAT-Math and a combined SAT-Math plus SAT-Verbal of 930 or more. Approximately 1 in 200 American 12-year-olds would qualify for CTY science classes, based upon these criteria.

Whether the individualized methods found so successful for accelerated mathematics could be applied to the sciences, however, was a different issue. High school mathematics tends to be based upon mastery of specific processes that, in turn, supply elements in the construction of a developing conceptual framework for mathematical ideation. Mathematically talented students can learn these processes almost effortlessly and consequently build concepts quickly. The sciences, however, tend to be more content-laden, introducing unfamiliar ideas and vocabulary. They may involve laboratory work that cannot be readily accelerated. The content of introductory science courses, especially biology and chemistry, may not be as hierarchical in nature as mathematics. Still, there was reason to believe that the same general principles might be successfully applied to science courses requiring similar conceptual skills.

The purpose of these accelerated classes was to do more, not less—to put the students on the road to further achievement in the subject, not merely dispose of it early. Following the fast-paced science courses, students were expected to take College Board Advanced Placement classes, college science courses, or pursue other advanced study in science.

**Part I:
Result of the
Fast-Paced
Science
Courses,
1982-87**

Biology

Method. The fast-paced science courses typically had the following format (see also Stanley & Stanley, 1986; Lynch, 1990b): each morning, students met with their biology instructor (a high school Advanced Placement Program teacher or a college teacher) for 3 hours of lecture and discussion, followed after lunch by a 2 1/2-hour laboratory session taught by a college senior or a graduate student. Each evening, students had a mandatory 2-hour study period to do homework, laboratory reports, and readings.

The total amount of laboratory time allotted over a 3-week period was 37.5 hours. This is almost double the minimum standard required by the New York State Department of Education for high school laboratory science courses. (The New York State requirement for lab sciences is 20 hours per 1-year course. New York State was chosen as an example because it has specific requirements and because its educational system is generally highly regarded.) Laboratory experiences not only inculcate crucial concepts but also serve as a powerful motivator for adolescents. Moreover, since CTY encourages students who are successful in the fast-paced science class to skip the same course in their regular high school and proceed to more advanced work in science, it was important that the students were provided with the science experiences required by school districts to grant credit.

The text initially used was a college-level general biology text. This was later changed to *Biology: The Study of Life*, by Schraer and Stoltze (1983)—a standard, well-written high school text. Although students were generally able to handle the conceptual level of the material in the college text, the sheer volume was unwieldy in a 3-week course, and the depth of the material exceeded that usually required for a first course in high school biology.

Pretest achievement scores demonstrated that some of the most basic material could be dispensed with, and all students were well-prepared in mathematics.

Pretesting. Diagnostic/prescriptive pretests were given in order to ascertain the mastery levels of individual students and the topics that had been learned previously, and to obtain baseline data for the group. Over a 6-year period, the students' mean pretest scores on the Biology Achievement Test have been rather stable, although individual student scores have

ranged from chance level (200s) to the 90th percentiles (700s). (It should be noted that the College Board science achievement tests—biology, chemistry and physics—are ordinarily taken by certain high school juniors and seniors who are applying to selective colleges and who have completed one or more years of the respective high school science.) The average pretest score of 473 (which is equivalent to the 25th percentile for the national norm group of high school students) demonstrates that these students had acquired some knowledge of biology at a young age. The average age of the fast-paced biology students was 13.6 years.

Posttesting. Students were posttested with a College Board Multiple Assessment Program and Services (MAPS) Biology Achievement Test. The average posttest score was 627, which corresponds to the 74th percentile for the national norm group (MAPS Users Manual, 1987). The gains in achievement measured over a 3-week period are remarkably stable from year to year, teacher to teacher, and site to site—a mean gain of 154 points. (Individual student gains have ranged from -10 to +320 points.)

Chemistry

Methods. The rationale and structure of the fast-paced chemistry course were similar to those of the fast-paced biology course. Students learned material ordinarily covered in a rigorous, first-year high school chemistry class in 3 weeks, or 82.5 hours of instruction. A good, standard high school chemistry test, *Chemistry: Experiments and Principles*, by O'Conner, Davis, McNab, & McClellan (1982) was used. Since 1985, the subject-matter prerequisite for fast-paced chemistry has been Algebra I.

Pretesting. In 5 years of testing, 339 students wrote the CEEB Achievement Test in Chemistry with an average pretest score of 428. This is approximately equal to the 8th percentile for the high school junior and senior norm group. Fast-paced science students were not entering the chemistry class with as much background information as in the biology classes. This is not surprising since both elementary and middle school science and health classes tend to emphasize life sciences.

Posttesting. After 3 weeks of instruction, the average posttest score on a MAPS Chemistry Achievement Test for 352 subjects over a 6-year period was 634, which approximately equivalent to the 69th percentile of the national norm group of high school juniors and seniors

Part II: Factors Affecting Science Achievement

who had completed one or more years of chemistry.

In 1985 students also took a form of the American Chemical Society (ACS) examination as a final test of subject mastery. The mean raw score for the 45 students tested on the ACS exam was 65.9, which was equivalent to the 75th percentile for honors chemistry students who had completed a 1-year high school chemistry course. Their performance further demonstrates the competency of students taking the 3-week course.

Physics

Methods. The structure and pedagogical techniques for the fast-paced physics class were similar to those used for fast-paced biology and chemistry. One important difference, however, was that there were two different fast-paced physics courses (as of 1985): one for students who have had calculus and the other for students who have had algebra II (geometry is also highly recommended). Although the same high school textbook, *College Physics* (Miller, 1982), was used for both courses, the content of each course was modified according to the mathematical levels of the students.

Pretesting. The average pretest score on the achievement test for fast-paced physics over a 5-year period for 213 students was 536, which is equivalent to the 34th percentile for the high school juniors and seniors in the highly able norm group.

Posttesting. The overall average posttest score on the MAPS achievement test in physics (for all fast-paced physics students regardless of their mathematical background) was 644, which is equivalent to the 70th percentile for high school juniors and seniors. Overall, the physics posttest scores, when converted to percentile equivalents (70th), were similar to those for biology and chemistry (with percentiles of 74 and 69, respectively).

The fast-paced science courses provided a unique research opportunity, in that students were in residence for 3 weeks in a setting where the number of variables affecting content mastery are inevitably reduced and controlled. Compared to a typical high school, there was relative uniformity in curriculum, pacing, amount of study time allotted, and access to resources for additional help. These were excellent circumstances in which to explore the relationship between science achievement and

ability or age for academically talented adolescents.

Although the data for all three science courses do not offer grounds for firm conclusions regarding the relationship between mathematical and verbal ability and science achievement, the contribution of mathematical ability seems somewhat greater than that of verbal ability. (Zak, Benbow, & Stanley, 1983 found the same thing for chemistry at the college level.) For biology, there is little support for the contention that verbal ability is as crucial to achievement gains as mathematical ability.

Science Achievement and Age. Fast-paced science students generally ranged in age from 12 to 16 years, although younger students were occasionally admitted on a case-by-case basis. Overall, the data on age and science achievement show rather dramatically that traditional age-grade requirements for science coursework were not warranted for this group of academically talented students.

Conclusions

The results of this study of fast-paced science classes suggest applications for educators. Bright, highly motivated students with strong backgrounds in science need not spend the usual 135 to 165 hours of formal instructional time on introductory sciences. Conversely, for gifted and talented students grouped by ability, the time allotted for a high school science may remain unchanged hours—but certainly the pace, amount of material covered, and the level of the material should be altered according to the abilities of the students. In light of the current criticism of ability grouping, it seems critical that classes for the academically talented be defensible in terms of both differentiated curricula and measurable achievement results (Slavin, 1990a, 1990b).

For coursework like biology, the degree of repetition prevalent in many American K-12 systems (which often includes an emphasis on life science in elementary school, middle school life science and health, and high school biology) seems particularly unnecessary for academically talented students. Ability measures such as the SAT and pretesting would help select candidates for acceleration or inclusion in honors sections.

The results of the present study do not show any relationship between science achievement and age for these academically talented students, with the exception of biology. These

students are quite capable of the reasoning required in high school sciences. With the current movement toward abolishing ability grouping or minimizing it (Slavin, 1990a, 1990b; Robinson, 1990), the acceleration option may be taken more often in order to rescue talented students from the boredom that may result from a curriculum that is too slow or too basic.

If the students in the fast-paced science courses were able to do this work in approximately one-half of the instructional time normally provided in the regular school, one may conclude that they would fare at least as well in the corresponding science course provided at their high school, where the competition is not usually as strong and the instructional time is doubled and extends over 9 months rather than 3 weeks.

On the average, these students mastered science material 2 years before it is made available to them in a typical American high school, an achievement that does not seem particularly extraordinary if one compares the CTY curricula with that of other countries. Coombes and Keeves (1973) and Stevenson, Lee, and Stigler (1986) report that in Japan science courses in junior high school cover topics reserved for high school in the United States. Since the Japanese system provides this level of instruction for most students, it would stand to reason that science education in America could begin to offer classes traditionally reserved for high school to younger students—perhaps, at first, the academically talented.

This study contributes to the emerging picture of science talent and its antecedents by exploring the relationship between mathematical and verbal ability and achievement in science. Educators may find this information useful in considering prerequisites for honors science classes since the evidence is clear that IQ patterns alone do not contain sufficient information for forming special academic groupings (Slavin, 1988).

The most important conclusion, perhaps, is that talented students can learn high school sciences successfully at a far earlier age than is typically allowed in our schools. Although the current concern for improving science education for all children seems well justified, some additional attention to improving opportunities for the gifted and talented to advance in science at a faster pace would also seem warranted.

Acknowledgments

The author is grateful to Dr. William G. Durden, Julian C. Stanley, and Ann E. Lupkowski of The Johns Hopkins University for their careful review of the paper and suggestions. The statistical analyses were done by Dr. Lisa Rosner, formerly a research associate with CTY and currently an assistant professor of the history of science at Stockton State University.

References

- Angoff, W. H. (Ed.). (1971). *The College Board Admissions Testing Program*. New York: College Entrance Examination Board.
- Bartkovich, C.P., Perkins, S., & Stanley, J.C. (1983). Fast-paced precalculus mathematics for talented junior high school students: Two recent SMPY programs. *Gifted Child Quarterly*, 25(2), 73-80.
- Benbow, C.P., Perkins, S., & Stanley, J.C. (1983). Mathematics taught at a fast pace: A longitudinal evaluation of SMPY's first class. In C.P. Benbow & J.C. Stanley (Eds.), *Academic Precocity: Aspects of its development* (pp. 51-78). Baltimore, MD: The Johns Hopkins University.
- Blurton, C. (1983). Science talent: The elusive gift. *School Science and Mathematics*, 83, 654-664.
- Coombes, L.C. & Keeves, J. (1973). *Science education in nineteen countries*. New York: Halstead.
- Durden, W.G. (1987). *The Johns Hopkins University Center for the Advancement of Academically Talented Youth (CTY): One aspect—mathematics*. Paper presented at Fordermassnahmen für mathematisch besonders befähigte Schüler im Vergleich, Hamburg, Germany.
- George, W.C., & Denham, S.A. (1976). Curriculum experimentation for the mathematically talented. In D.P. Keating (Ed.), *Intellectual talent: Research and development* (pp. 103-131). Baltimore, MD: The Johns Hopkins University Press.
- Hallinan, M.T. (1990) The effects of ability grouping in secondary schools: A response to Slavin's best-evidence synthesis. *Review of Educational Research*, 60(3), 501-504.

- Hansen, R. A. & Neujahr, J. (1976). Career development of high school students talented in science. *Science Education*, 60, 453-462.
- Keating, D.P. (1975). Precocious cognitive development at the level of formal operations. *Child Development*, 46, 276-280.
- Kulik, C., & Kulik, J. (1984). Effects of accelerated instruction on students. *Review of Educational Research*, 54, 409-425.
- Lord, L., Linnon, N., Coe, W.J., Allman, W.F., & Anderson, E. (1988, March 14). What puts the whiz in whiz kids. *U.S. News and World Report*, pp. 48-50.
- Lynch, S. (1990a). Credit and placement issues for the academically talented following summer studies in science and mathematics. *Gifted Child Quarterly*, 34(1), 27-30.
- Lynch, S. (1990b). Fast-paced sciences for the academically talented: Issues of age and competence. *Science Education*, 74(6), 585-596.
- MAPS Users Manual. (1978). New York: The College Board.
- Miller, F. (1982). *College Physics*. New York: Harcourt, Brace, Jovanovich.
- O'Conner, P.R., Davis, J.E., MacNab, W.K., & McClellan, A.L. (1982). *Chemistry: Experiments and Principles*. Lexington, MA: D.C. Heath and Co.
- Robinson, A. (1990). Cooperation or exploitation? The argument against cooperative learning for talented students. *Journal for the Education of the Gifted*, 14(1), 9-27.
- Roe, A.R. (1952). A psychologist examines 64 eminent scientists. *Scientific American*, 187, 21-25.
- Rogers, K.B. (1986). Do the gifted think and learn differently? A review of recent research and its implications for instruction. *Journal for the Education of the Gifted*, 10, 17-39.
- Schraer, W.D., & Stolze, H.J. (1983). *Biology: The Study of Life*. Newton, MA: Cebco, Allyn, and Bacon.
- Slavin, R.E. (1988). Ability grouping and student achievement in elementary schools: A best-evidence synthesis. *Review of Educational Research*, 57, 293-337.
- Slavin, R. (1990a). Achievement effects of ability grouping in secondary schools: A best-evidence synthesis. *Review of Educational Research*, 60(3), 471-500.
- Slavin, R.E. (1990b). Ability grouping, cooperative learning, and the gifted. *Journal for the Education of the Gifted*, 14(1), 3-8.
- Stanley, J.C. (1976). Special fast-math classes taught by college professors to fourth-through-twelfth graders. In D.P. Keating (Ed.) *Intellectual talent: Research and development* (pp. 132-159). Baltimore, MD: The Johns Hopkins University Press.
- Stanley, J.C., & Benbow, C.P. (1986). Youths who reason extremely well mathematically. In R.J. Sternberg & J.E. Davidson (Eds.), *Conceptions of giftedness* (pp. 361-387). New York: Cambridge University Press.
- Stanley, J.C. & Stanley, B.S.K. (1986). High-school biology, chemistry, or physics learned well in three weeks. *Journal of Research on Science Teaching*, 23, 237-250.
- Stevenson, H.W., Lee, S.-Y., & Stigler, J.W. (1986). Mathematics achievement of Chinese, Japanese, and American children. *Science*, 231, 693-699.
- Welsh, P. (1990, September 16). Fast-track trap: How "ability grouping" hurts our schools, kids, and families. *The Washington Post*, pp. B1, B4.
- Zak, P.M., Benbow, C.P., & Stanley, J.C. (1983). Several factors associated with success as an undergraduate chemistry major. *College and University*, 58, 303-312.

Trains

A train of thought...
 Train tracks...
 Track meet...
 Red meat...
 Red rose...
 Blue sky...
 Purple rain...
 Prince...
 Princess Diana...
 England...
 Battle of Agincourt...
 France...
 Italy...
 Leaning Tower of Pisa...
 Pizza...
 Forest trying to sing...
 "The hand that rocks the Table..."
 Movies...
 Beaches...
 Yellow sun...
 Big Bird is yellow...
 Sesame Street...
 Television...
 Commercials...
 Mr. Clean...
 My locker is not clean...
 School...
 Summer is almost here...
 Vacation...
 Transportation...
 Train...
 A train of thought.

Karen Churchill
 Bella Vista High School
 San Juan USD, Sacramento

our higher cognitive processes. We do not get new nerve cells in the cerebral cortex after birth. So now it is up to the environmental impact to determine further development of these precious brain cells. In our studies we have learned that an enriched environment can improve the brain at any age—in youth, adolescence, middle age, old age, and very old age. How essential it is to prepare that young brain for a healthy, productive life-style. Just as enrichment is beneficial, impoverishment is detrimental.

Therefore, the Lawrence Hall of Science (LHS), high up in the Berkeley Hills, is an ideal institution to serve as a role model to enrich young brains of every age. The Lawrence Hall of Science is the public service unit of the University of California at Berkeley for science and math education for grades K-12. At the present time, it is the leading center for K-12 science and math curriculum research and development in the nation. We produce materials for over one quarter of the nation's elementary schools.

Most people know us as a "dinosaur museum," but few in our area are aware of the number of programs created by our clever staff of about 300 people. We have four academic departments—Astronomy/Physics, Chemistry, Biology, and Mathematics. Where to begin with all of our programs? First, let us see how many people benefit:

- Over 300,000 people come to the LHS each year;
- 10,000 schoolchildren enroll in classes;
- 12,000 teachers learn new methods and science and math programs to take back to their classrooms;
- 130,000 children benefit from our outreach programs throughout Northern California (our vans go as far north as Redding); and
- 94,000 schoolchildren visit LHS each year.

The Great Explorations in Math and Science (GEMS) program—consisting of 40 teachers' guides for hands-on science experiments and covering such topics as liquid explorations, crime lab chemistry, convection, a current event, discovering density, acid rain, and rocket experimentation—serves the nation and 20 foreign countries. McDonnell Douglas has spent \$375,000 to begin GEMS centers to train teachers in Southern California. The first one is in Huntington Beach. We hope to establish such centers in many regions of the state. Hughes Aircraft has signed an agreement with

us to use our GEMS guides and FOSS (Full Option Science System) for satellite teaching. We have done our first satellite teaching in collaboration with the Spokane Educational Technology Center in Spokane, Washington, where teachers directly and children indirectly in the states of Montana, Idaho, Washington, Oregon, and Alaska benefited from hands-on LHS science programs. Satellite teaching will be able to reach children everywhere in the future. Receiving disks one foot in diameter will cost less than \$10.00.

IISME stands for Industry Initiatives for Science and Math Education. In this program teachers work in industries for five weeks during the summer to gain experiences to share in the classroom and to enrich their learning so as to prevent boredom and burnout. Numerous industries and government labs—about 61 in the first seven years of the program—participate in this program, which is a good investment to ensure qualified employees in the future.

EQUALS, a math program for teachers, counselors, administrators, and parents, targets girls and minorities in grades K-12. This program has been extremely successful throughout the nation. The talented math educators at the Hall more recently developed FAMILY MATH, which teaches parents how to help their children with math at home. In the first two years, 90,000 copies of the book were sold. By invitation from the Minister of Education, I took the book to Taiwan in December 1991, and two days after I returned, Taiwanese representatives were at the Hall arranging for a FAMILY MATH symposium to be held in their country in April 1992!

I was also invited to Venezuela in May 1992 to introduce more information about the Lawrence Hall of Science. Their Minister of Education wants to emphasize ecology, so he is interested in our "Global Warming" GEMS guide in addition to FAMILY MATH.

CEPUP (Chemical Education for Public Understanding Program), a teacher enhancement program, deals with education on such topics as toxic waste materials, risk comparison, ground water investigation, and chemicals in food additives. CEPUP reaches many states in the nation as well as overseas.

ACCESS (Alliance for Collaborative Change in Education in School Systems) prepares minority youth for entrance into the UC system. This program is very active in both San

Dr. Marian Diamond is the Director of the Lawrence Hall of Science and a long-time member of the Advisory Board for CAG. Her address is the Lawrence Hall of Science, University of California, Berkeley, CA 94720

Francisco and Oakland and receives some support from the Berkeley campus.

Other LHS programs in Oakland serve a total of 36,217 people in 23 separate programs.

MARE (Marine Activities, Resources and Education), a program that teaches young people about the ocean and its inhabitants, is our most recent acquisition. With over 70 percent of our earth occupied by water, how important it is for our youth to learn about the oceans and how to understand their potential.

Exhibits on the brain have also been developed at the Hall. How many people ever think about their brains and how to help them strive to achieve their optimum level? Presently, we have a traveling brain exhibit going to five other museums in the country. New exhibits dealing with the auditory system have been developed. A generous donor realized that many children don't learn because they do not hear well. Our new auditory exhibit will allow children to test their hearing and take the re-

sults home to their parents.

Our bookstore, Discovery Corner, has a marvelous collection of books about science and math and their contributors. Children enjoy the objects in the store often as much as the exhibits. If you want new gifts for the family, consider a drive to the Hall!

You might be familiar with our 60-foot life-size whale on our plaza. In May 1992 we obtained a 60-foot DNA climbing structure which will serve as a basis to design DNA exhibits within the Hall. From those exhibits we will develop classroom activities, which will in turn be written up in GEMS guides for teachers. And the cycle begins again with the next timely subject. What do you think that subject should be?

The Lawrence Hall of Science, which is only 24 years old, together with approximately 300 other science centers, offers a very realistic step in improving the education of the youth of our nation in the decades ahead.

Thomas-Vallens

Continued from page 1

need for workers with math and science backgrounds will grow by 36 percent, and yet only 5 percent of our nation's 2.7 million scientists are women. At the same time, the National Science Foundation claims that by the year 2010, our country will need 700,000 more scientists and engineers — requiring at least three times as many women scientists as we are currently producing (AAUW, 1992b).

Top level executives from TRW, Digital Equipment, Hitachi, and others joined leading educators, corporate leaders, and public officials to form the AAUW Roundtable. Providing better opportunities for girls was among the top recommendations from the Roundtable:

"In the global economy of the twenty-first century, America will no longer be able to compete with one hand tied behind its back. Clearly, the competitiveness of tomorrow's America will be determined by the ambitions, abilities and achievements of the girls sitting in today's classrooms" (AAUW, 1992 b).

The changing demographics of the work force are shaped by the current economic climate. These 1987-90 statistics from the U.S. Department of Labor illustrate the need for girls and women to be prepared for the work force in order to insure their financial survival:

1. 53% of mothers with children under a year old are in the work force.
2. 58.5% of the women who work do so because of severe economic need.

3. Women are making 70 cents on the dollar compared to men. In other words, a woman works 10 hours to make the same amount of money a man earns in 7 hours.
4. The most lucrative occupations for women are lawyers, engineers, mathematical and computer scientists, physicians, and operations and systems analysts. Of these positions, four out of five are highly technical, and two are directly computer related. (U.S. Department of Labor and the Women's Action Alliance, 1991)

In 1973, Lucy Sells identified math as the "critical filter" as to whether women would be in the higher paying fields of math, science, and engineering (Sells, 1973). That fact remains true today. As reported in *The Wall Street Journal*, "Women who took more than two college-level mathematics courses often achieved pay equity with men and in many occupations received higher average pay than men did." Citing the work of researcher Clifford Adelman in the *Journal*, "More math means more money." This is particularly true for women. (*The Wall Street Journal*, Sept. 11, 1992).

Women can no longer be considered to be "just homemakers and moms." In fact the average woman can expect to spend thirty-four years of her life in the labor force — many more years than needed to raise children. (Project VOICE, 1991). With such a tremendous need for women to be gainfully employed, they must

Mary Thomas-Vallens
teaches fourth grade in
the Irvine Unified School
District.

have the chance to work in the fields that will best serve their economic needs and those of our nation. Math and science education for girls and women is now a necessity.

What follows are the major issues that continue to keep girls out of math and science: beliefs about genetic differences between males and females, biased educational practices, and societal stereotypes. New paradigms need to be created to make math and science more meaningful and accessible to the other half of our population.

Genetic Differences between Girls and Boys

New brain research as shared in *Scientific American* and *Time Magazine* point out that there are indeed differences in the chemical and hormonal make-up of male and female brains. Males, as a whole, have some advantages over females, especially in spatial ability. This skill, often needed in math and science fields, refers to the ability to mentally rotate or manipulate an object in space, and to construct three-dimensional objects. Females, as a group, have the edge on tasks involving perception, language, and mathematical calculation (Kimura, 1992 and Gorman, 1992).

While some may point to these differences as an explanation for the predominance of males in the areas of math and science, the differences are not great enough to account for the high discrepancy in the numbers of men and women in these fields. Additionally, the findings reported represent how males and females do on the average and do not account for individual strengths and weaknesses. Researcher Melissa Hines of UCLA reports:

Most of the gender differences that have been uncovered so far are, statistically speaking, quite small. Even the largest differences in cognitive function are not as large as the difference in male and female height. You still see a lot of overlap. (Gorman, 1992).

Scientists have not been able to rule out the impact of the environment on gender differences. *Time's* report states:

...research into innate sexual differences only underscores humanity's awesome adaptability... Even the concept of what an innate difference represents is changing. The physical and chemical differences between the brains of the two sexes may be malleable and subject to change by experience: certainly an event or act of learning can directly affect the brain's biochemistry and physiology... (Nash, 1992).

The brain's ability to change due to experience raises the issue of whether or not we unwittingly deprive girls of the experiences needed to excel in math and science. Studies show that when girls are given the same training as boys, they improve their abilities.

...girls have equal or better spatial abilities than boys do in the early elementary grades. ... The spatial abilities of both boys and girls were improved by periods of classroom instruction in model building, working with three-dimensional objects, and solving spatial visualization puzzles. ... By senior high school, boys began to show, on the average, a slight performance advantage in spatial ability skills tasks. (Klein, 1989)

Many researchers believe that the gender differences in spatial ability are further increased by the experiences boys have while doing certain "boy-type" activities. These include constructing model cars and airplanes, building with Legos, map reading in Boy Scouts, and active involvement in sports and other free-roaming play activities. (Klein, 1989)

Another area where ability comparisons are made between boys and girls are in test scores. High-school girls often get lower average scores on standardized math tests than boys. Again, some people may claim aptitude over experience; however, according to Department of Education researcher Adelman, "College-bound females who have had three years of math in high school get about the same SAT scores as males with equivalent schooling." (*The Wall Street Journal*, 1992)

Differences in girls' genetic ability in math and science cannot be used to justify women's relative absence in these fields. When given the same experiences and training as boys, girls do excel. In cases where girls don't succeed in math and science, they should be given the same kind of compensatory support we provide boys in the areas of reading and language.

Math and Science Gender Bias in the Classroom

Much media attention has been given to gender bias in education, thanks to the previously mentioned AAUW report. *How Schools Shortchange Girls* clearly delineates that girls are not receiving an equal education. The AAUW study and others suggest that girls acquire a "learned helplessness" from their school experiences. Boys dominate the classroom and receive more attention from their

teachers. Teachers are twice as likely to encourage boys to complete a task themselves. As a result, by adolescence girls lose their confidence and their self-esteem, and they gradually lose interest in their academic pursuits. (AAUW, 1992a)

Research shows that in the classroom, gender bias exists, especially in areas of math and science:

At both the elementary and secondary levels, when teaching math, teachers initiate more academic contact with boys — even when girls and boys initiate the same amount of teacher contact. ...teachers give boys more attention... and different feedback for wrong answers. (Campbell, 1986)

As girls are ignored or treated differently by their teachers, their confidence in their abilities is shaken. Confidence is the most important variable in learning mathematics, according to research by Elizabeth Fennema:

Confidence is positively correlated with both math achievement and selection. Even when there are no sex differences in their math performance, girls tend to feel less adequate in math, to have a great tendency to underestimate their abilities, and to have less confidence in their abilities than do boys. (Campbell, 1986)

Additionally, textbooks also perpetuate the notion that math and science are subjects for boys. Texts tend to show more male figures, present the findings of many more male scientists and mathematicians, and give science examples that relate to more "masculine" type activities and interests. When females are shown, they are often passive observers or recorders of data. (Klein, 1989) Whether it is deliberate or not, girls are repeatedly discouraged from pursuing mathematics and science by their teachers and by the materials they use.

Gender Bias in Society

The perception that math and science fields are for males predominates outside the classroom as well. Our culture has placed a much greater value on a young woman's appearance, conformity, and femininity than it has on supporting the development of her own potential. Our society views math and science as mainly the domains of males. The effect of this view is easily understood when our societal expectations are compared to other cultures. If parents don't perceive the fields of math and science as equally acceptable for girls and boys,

parents are not likely to encourage their daughters to explore those areas.

In Saudi Arabia, for example, where society limits the number of acceptable career choices for women, only 5% of women pursue science-related careers. In Poland, societal views differ, and 60% of the women go into science. (Klein, 1989)

Many parents feel that, because they were raised in the era of women's rights, gender bias would not be a trap into which they would fall. Many do believe that girls and women should and can be whatever they want to be. However, parents should consider the messages they are giving children about their own abilities as adults. A closer look at what happens at home may reveal subtle biases against daughters. When children come to parents with broken toys, how often are fathers the delegated "fixers and savers?" When math and science homework or projects require parental assistance, who helps out — mom or dad? What about the choices offered to girls for summer classes and extracurricular activities? How often do parents sign up girls for science workshops, math competitions, hands-on museum experiences, etc.? Parents are children's most influential role models and teachers. The example set at home is critical to the choices and experiences girls and young women will have in their lifetime.

New Paradigms for Bias-Free Math and Science Education

1. **GENETICS:** Girls are innately able to be successful in math and science. Raise the level of expectations for their success, and provide bias-free learning experiences that build their skills in spatial abilities.
 - a. Give girls toys that will enhance their spatial abilities — ones that allow them to find relationships between objects, manipulate objects in space, take them apart and put them together again, and organize and group them. Building with blocks, setting up train track sets, repairing broken items, constructing puzzles and models, and experimenting with microscopes and magnifying glasses encourage these skills.
 - b. Engage girls in what Sheila Tobias calls "street mathematics." (Tobias, 1978) Activities with balls, bikes and other hand-eye coordination type toys involve ex-

perimentation with the principles of physics, and other math and science concepts. Maneuvering a bicycle through obstacles, braking quickly to avoid a barrier, intercepting a thrown ball, calculating batting averages, observing ball trajectories, and hitting a target all enhance a child's inner sense of the physical world. Making and flying paper airplanes and kites gives children experiences with aerodynamics. Let girls be actively involved in these activities, even if it means getting dirty.

- c. Have girls interpret and construct grids, graphs, charts, maps, and digraphs to help them understand two-dimensional representations. Encourage the use of tangrams, cubes, geometric solid figures, mirrors to explore symmetry, and pattern blocks to build an understanding of three-dimensional objects.
- d. Seek games (board and computer) that apply the skills mentioned in "b" and "c," but are presented in formats that seem inherently interesting to girls, e.g., strategy games based on saving the environment from pollution or saving endangered species.

2. EDUCATIONAL PRACTICES:

Girls have a right to a non-biased education. Subtle and institutionalized biases will not change without direct intervention. To create the needed changes, current practices must be examined specifically for gender bias.

- a. Alert school boards, administrators, teachers, and parents to the biases against girls in school, particularly in math and science. Point out the long-range social, emotional, and economic consequences of these biases. Make sure fair allocation of resources is provided for programs that promote non-sexist career education, self-esteem, girls' athletics, math and science curricu-

lum, and special activities such as math competitions, science fairs, and Invent America.

- b. Review textbooks and other instructional materials for sex-stereotyping. Purchase materials that reflect equal access to the math and science fields. Look for ways that math and science curriculum can use examples that will tap girls' interests.
- c. Check math and science enrollment, especially at the junior and high school levels. Send the message that algebra, geometry and beginning science classes are baseline coursework, and create the expectation that advanced courses are necessary for both boys and girls. Create peer role models by having girls in advanced courses "recruit" others to take these classes. Have them present experiments to students in prerequisite courses, and talk to them about the fun and excitement that can be had in higher math and science.
- d. Teach educators questioning and responding strategies that promote higher level thinking skills and eliminate bias. Effective use of wait time, providing specific feedback related to the task, and promoting and acknowledging students' active participation in class will help all students succeed.
- e. Use hands-on materials and expect girls to "do" as much as boys so they don't learn helpless-type behavior. In cooperative learning groups, rotate jobs so girls and boys have equal access to materials, leadership positions, and teachers' attention. Vary groupings to include coed and same-sex groups, similar ability and mixed ability groups, and those based on interests.
- f. Be frank with students about gender bias. Point out how boys tend to capture teachers' atten-

tion, and provide students productive means to make changes themselves. Illustrate this by having students tally on an index card how often they are called on, and whether they were called on because of their attention-getting behavior, or for ideas they have to share. Follow this up by discussing students' perceptions and feelings about the kind of attention they get from teachers. Then try to alter traditional means for calling on students, by drawing names from a hat, or assigning table numbers to students and rolling dice, for example.

- g. Build the self-esteem and confidence of girls. To do well in math and science, girls need to feel confident about their abilities and how others perceive what they can do. They need to be encouraged to explore and take risks, and gain competency from learning by doing. Girls need to make decisions, learn from their mistakes, and think and speak for themselves. To do so, they must have support for doing so — not protection. They must be acknowledged for what they do well, and not just for how they look and behave. Strong female role models and mentors can help girls envision their own future as active, productive citizens.

3. SOCIETY'S ROLE: Girls and women will increase their contributions to the fields of math and science as doors are opened wider for them.

- a. Businesses need to support the process of helping young women pursue scientific and technical fields. This can be done by setting up intern programs, mentor support, career awareness days and on-site visitations. Financial support for educational programs is needed. Lasting changes can't be made unless business and

industry embrace educational efforts to promote math and science success for girls.

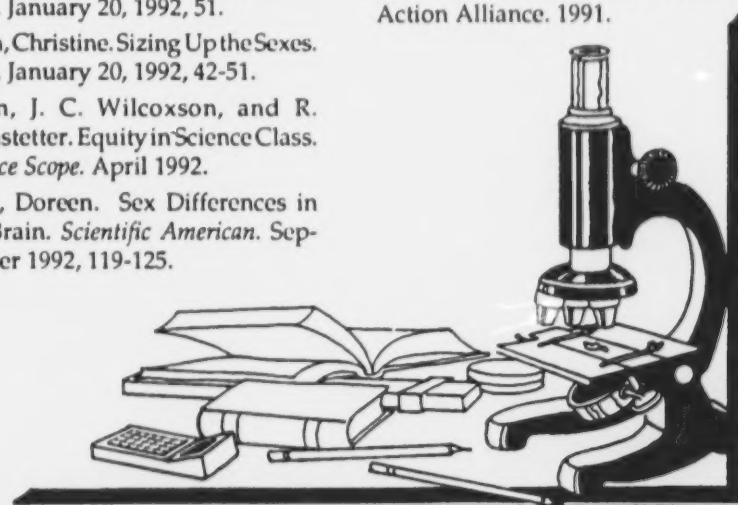
- b. Parents must check their expectations for their daughters, giving their girls the same freedom and flexibility to reach their potential as boys. They must remove the subtle limitations they are creating by the toys they select for girls, the activities they encourage, and the experiences they create. They can develop their daughters' interest in math and science by taking their girls to science museums, planetariums, and extra-curricular math/science classes, and providing books and materials at home that utilize math and science skills.
- c. Parents should take an active role in providing career exposure and counseling. They can assist girls in taking advanced coursework in math and science. They can seek out mentors and role models for them in industry. Outings to transportation centers, science labs, hospitals, wildlife centers, and high tech industries can be added to family activities.
- d. Families should involve girls in everyday activities which utilize technical skills such as car maintenance, home repair, landscaping, and family finances.

Conclusion

The high school graduating class of the year 2000 is in fifth grade today. What happens to girls now in school will greatly determine whether they will be prepared to enter college-level math and science courses needed in the workplace. Unless we actively make math and science more accessible to girls and women, we are limiting our technological competitiveness in a global economy. In a sense, we're competing in a game, but encouraging only half the team to play.

References

- Aiello, J. Encouraging Girls in Math and Science. *CSTA Journal*, Summer 1989, 15-16.
- American Association of University Women. How Schools Shortchange Girls. Washington, D.C. AAUW Educational Foundation, 1992a.
- American Association of University Women. *Shortchanging Girls, Shortchanging America: A Call to Action*. AAUW Education Foundation, 1992b.
- Becker, J. and J. Jacobs. Sex: Is It an Issue in Mathematics? *Educational Horizons*. Winter 1983, 60-67.
- Blosser, P. Procedures to Increase the Entry of Women in Science-related Careers. *Clearinghouse for Science, Mathematics, and Environmental Education*. Columbus: ERIC, 1990.
- Callahan, C. How Schools Shortchange Girls: Implications for Parents and Educators of Gifted Girls. *Communicator*. California Association for the Gifted. September 1992.
- Campbell, P. Girls and Math. *WEEA Digest*. Education Development Center, Inc. U.S. Department of Education. June 1991, 1-6.
- Campbell, P. What's a Nice Girl Like You Doing In a Math Class? *Phi Beta Kappan*. March 1986, 516-519.
- Ehrenreich, Barbara and J. Madeleine Nash. Making Sense of *la Différence*. *Time*. January 20, 1992, 51.
- Gorman, Christine. Sizing Up the Sexes. *Time*. January 20, 1992, 42-51.
- Johnson, J. C. Wilcoxson, and R. Bonnstetter. Equity in Science Class. *Science Scope*. April 1992.
- Kimura, Doreen. Sex Differences in the Brain. *Scientific American*. September 1992, 119-125.
- Klein, C. About Girls and Science. *Science and Children*. Oct. 1989, 28-31.
- Notes for Parents: What You Can Do to Encourage Your Daughters in Math and Science. *The American Association for the Advancement of Science Directorate for Education and Human Resources Programs*, Spring 1990.
- Project VOICE, New York State Occupational Equity Resource Center, Fall 1991.
- Sells, S. *High School Mathematics as the Critical Filter in the Job Market*. (ERIC: Ed 080 351, 1973).
- Skolnick, J. C., C. Langbort, and L. Day. *How to Encourage Girls in Math and Science*. Palo Alto: Dale Seymour Publications, 1982.
- Stipp, D. The Gender Gap. *The Wall Street Journal*. September 11, 1992.
- Tobias, Sheila. *Overcoming Math Anxiety*. New York: W.W. Norton and Company, Inc. 1978.
- Tracy, D. and S. Davis. Females in Mathematics: Erasing a Gender-related Math Myth. *Arithmetic Teacher*, December 1989, 8-11.
- "20 Facts on Women Workers," Women's Bureau, U.S. Department of Labor, September 1990. 1987-9 data.
- Weiss, I. *Science and Mathematics Education Briefing Book*. Chapel Hill, N.C.: Horizon Research Inc. 1989.
- "Women in the Labor Force," Women's Action Alliance. 1991.



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COMMUNICATOR

MIDDLE SCHOOL GIFTED

Middle School Madness

by Terry A. Thomas

Some middle schools today present a hostile environment for gifted students. There are a few beacons of enlightenment where all students, including the gifted and talented, are given the academic challenge they require, but these middle schools are rare. Most middle schools serve the primary function of warehousing bright young adolescents, as if they were waiting for adolescence to end. The outcome can be intellectually, socially and emotionally hazardous to gifted students.

The Needs of Gifted

The literature is rich with descriptions of the needs of gifted children. Most experts agree that the needs of gifted and talented adolescents are different than the needs of other students in degree rather than in kind. Adolescents need challenge and stimulation. As with most of us, they want to be engaged in activities that are interesting and meaningful to them. They need to test their abilities in an environment that is psychologically safe. Belonging takes on new meaning as they begin to question who and what they are. Peer acceptance can become an overpowering urge which places heavy demands on students to conform with group norms. Gifted adolescents need all of the above, plus a good bit more. Academically, they need depth, complexity, and pace. They need instruction that is differentiated to meet their needs. Socially, they need acceptance through associations with their peers who may not be their agemates. Why do so many middle schools miss the target? Why are middle schools insensitive and unresponsive to the needs of their

Developing Leadership During The Middle School Years

by Margaret Gosfield

How often have we heard the phrase, "these are our future leaders" in reference to gifted students? Indeed, developing future leaders is a primary argument in support of the need for special programs for gifted. And yet, we seldom find specific programs designed to train students for leadership within our GATE programs.

Ventura Unified School District has been developing such a leadership training program for the past several years through the efforts of a core of GATE teachers. Some of them have been teaching GATE classes for many years, while others only recently became involved; but all are committed to the belief that, while math, language arts, social science or reading are the academic courses they teach, leadership training is also an essential component of the curriculum.

These teachers believe that the middle school years are especially appropriate for leadership training. The students are old enough to take advantage of the benefits that formal training can provide at an age when most are open to new ideas. Furthermore, waiting until the high school years may be too late. Students wishing to apply to the University of California or colleges of comparable quality, often have high school schedules so filled with academic requirements that there is little time for specific leadership training.

The Ventura leadership training program developed incrementally and continues to evolve and expand. At present it is comprised

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PRESIDENT'S COLUMN



Sandra Kaplan

Among the many responses that students have to their giftedness is that of disenfranchisement, or the lack of connection with their own abilities. This disenfranchisement from one's giftedness manifests itself in a variety of academic behaviors.

Some gifted students reject their giftedness by refusing to be active participants in the gifted program or differentiated curriculum. Some gifted students deny their giftedness by providing substantive evidence of their inability to perform as teachers perceive that gifted students should. Other gifted students disaffiliate from their giftedness by continually requesting affirmation of their performance by asking teachers and peers if their work is "good" or correct. This insecurity often ignites a teacher's inquiry into information which would verify the student's giftedness and placement in a gifted program.

The disenfranchised gifted student is apathetic toward academic endeavors, reluctant to participate and susceptible to failure. Basically, the students who are disenfranchised from their giftedness are unwilling to accept responsibility for their ability.

There are many reasons why gifted students' disenfranchisement from their giftedness is noted during the middle school years. One factor which contributes to the appearance of this problem is the avoidance of academic discussions about the nature of giftedness and the individual's personal responsibility toward one's gifts. At middle school and in the current educational climate, discussions of the "C" word are limited and services for gifted students sometimes are devalued. Gifted students can be indirectly encouraged to relinquish their responsibility for their giftedness under such conditions.

Learners who disenfranchise themselves from their ability need curricular experiences and opportunities that clarify the dimensions of giftedness and support them in applying their abilities. Integrated into the services provided gifted students should be opportunities to:

- explore the differences between concepts of true scholarship and scholarship for the sake of obtaining grades
- read about and discuss the lives and contributions of gifted people
- study the wonder of the learning process
- inquire into the variables related to motivation theory
- collaborate and share experiences with their academic peers
- observe the valued work of gifted people displayed in museums, etc.

Disenfranchised gifted students have made conscious decisions to disassociate themselves from their giftedness. They become part of the hidden gifted population who often do not surface again to fulfill their potential.

PUBLISHED BY THE CALIFORNIA ASSOCIATION FOR THE GIFTED

Administrative Assistant, Sharon Mountford

818/888-8846...FAX 818/888-6225

The *CAG Communicator* is published five times during the year, in September, November, January, April, and June. Opinions expressed by individual authors do not necessarily represent official positions of the Association. Subscriptions are available to non-members at an annual cost of \$15.00.

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CONFERENCE CALENDAR

April 23-24, 1993

Association for the Education of Gifted Underachieving Students (AEGUS)

6th Annual National Conference

High Potential At Risk: Taking a Positive Approach

Portland State University, Portland, Oregon

For information call 206/230-5372

July 19-30, 1993

Confratute '93,

Annual Summer Institute on the Gifted and Talented

University of Connecticut, Storrs, CT

For information call 203/486-4826

August 2-6, 1993

Rimm Underachievement Institute

How to Help Bright Underachieving Children

Milwaukee Marriott, Brookfield Wisconsin

For information call 800/475-1118

August 8-12, 1993

**10th World Congress on Gifted and Talented Education
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Schedule of CAG-sponsored events

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| April 3 | Executive Committee meeting,
LAX Hilton, 10 AM to 4 PM |
| April 13/15 | Observation at Rose Avenue School
(elementary), Oxnard SD |
| April 20 | Observation at M.L. King Jr. JHS,
Grant Union HSD, Sacramento |
| April 21/22 | Observation at West High School,
Bakersfield |
| April 22 | Observation at Stockdale High School,
Bakersfield |
| April 23-25 | Board meeting, Beverly Heritage Hotel,
Costa Mesa (Orange County) |
| April 23-25 | Catalina trip, rescheduled #1 |
| April 28 | Observation at Luther Burbank Middle
School, Burbank |
| Apr. 30-May 2 | Leadership Camp at Camp Nawakwa |
| May 1 | GATE Mini-conference, Durham CA
Call Alison Watson for info, 916/895-4695. |
| May 7 | Observation at Olive Peirce Middle
School, Ramona |
| May 7-9 | Catalina trip, rescheduled #2 |
| May 14-16 | Leadership Camp at Camp Lassen,
Butte Meadows |
| July 11-24 | California in the 21st Century,
Summer Seminar, Westmont College |

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Erratum

The article *Nurturing Giftedness in Young Children* by Wendy C. Roedell in the November issue of the *Communicator* was mistakenly identified as being reprinted from *Patterns of influence on gifted learners, the home, the self, and the school*, pp. 13-28. New York: Teachers College Press. This article was an ERIC digest of those pages, E487, ED 321492.

Right in the Middle

by Jean Drum, Editor



Jean Drum

The California Department of Education has released three reports dealing with educational reform in our state. The report dealing with the elementary grades is titled *It's Elementary*. Ah, think its readers, what a clever title that is, with its play on words and its implication that the crafting of a good elementary curriculum is easily within our reach. The document dealing with secondary education is titled *Second to None*, another upbeat approach with the promise of great things. The report on the third area of education is quite another matter—*Caught in the Middle*. What a place to be! Who wants to be "caught in the middle" of anything?

On the other hand, think about it. Middle school. Junior high school. Intermediate school. Grades five to eight. Grades six to eight. Grades seven and eight. If the educators responsible for them are having such a hard time figuring out what to call their school and even how old they ought to be when they go there, can we wonder that the kids themselves seem confused?

Caught in the Middle discusses the "wide range of intellectual, physical, psychological, and social development" found in the young adolescents of middle school age and the importance of "a caring transition as they move from elementary school to high school" and instruction which "emphasizes academic integrity." These are high goals, and if the task force recommendations can be put into effect, we can expect satisfying educational and social outcomes, so that these kids will no longer be "caught" in the middle.

As educators (both in the schoolroom and in the home) of gifted adolescents, we can applaud the general aims of reform in the middle schools, but we also recognize the importance of keeping a watch on the special needs of our group, and *Caught in the Middle* does not spend much space addressing the question of the gifted middle school student. The "right of every middle grade student to have the opportunity to master the highest and best curricula offered in each of the middle grades" is promised, and "grouping by skill level for . . . accelerated learning on the basis of valid, specific instructional purposes and for stipulated periods of time" is provided for. However "heterogeneous grouping practices should be normative in middle grade classrooms." Cooperative learning and

peer tutoring are stressed as the way to achieve maximum learning for all students of all abilities, and just about the only reference to "capable students" in the entire document says they "can assist others" in a cooperative learning group.

At this point, another look at the term "cooperative learning" might bear some fruit. This teaching strategy appeared in part as an answer to the complaints of industry that workers coming out of our school systems were deficient in the skills need to work together to solve problems. Cooperative learning was devised as a way to meet this need, and while there are variations in specific practices, the general model consists of a group of four students, one of whom is considered high ability, two of middle ability, and one lower ability. The group is given a task, and the expected outcome is that all members of the group will learn a new idea or skill. However, this cannot be said to be a particularly realistic model to ready students to contribute to the work place.

If a business wants an employee to "learn" something, it assigns someone who already knows how to teach that skill or process. "Sue, I want you to show Joe how that new computer program to keep track of our inventory works." It's an efficient method and it makes the best use of talent and knowledge. When a business wants to develop a new product, put together an advertising plan, or figure out how to streamline a process, they use cooperative *problem solving*. They need people who can work together, give and take, and share ideas and knowledge. When a business does this, it puts together a group with the skills and knowledge necessary to solve this particular problem. There may be a wide variety of skills and knowledge held by the members of the group, but they all are contributing on an equal basis, and the primary goal is the solution of the problem rather than individual growth for any member of the group. This is an extremely useful activity in just about every area of life, from a meeting of the President's Cabinet to a discussion in a Girl Scout troop of their next camp-out, and developing the skills necessary for working in this kind of group is an excellent activity for the classroom. However, the distinction between solving a problem as the major goal and learning as the major goal should be kept firmly in

mind. Of course it goes without saying that in the largest sense everything we do involves learning something, so the participants in a problem-solving group are going to learn a good deal along the way. But the fact remains that learning new material is incidental and not the main purpose of the group.

If an English teacher wants to have a group of students discuss the conflict between the characters of a novel and how it leads to the outcome of the story, all of the student must have read the book in order to be full participants and make sensible contributions. If a history teacher wants a group to make a model of the battlefield at Gettysburg on a large piece of plywood and then explain the progress and outcome of the battle to the class, all of the members of the group need to be familiar with the battle in order to contribute fairly and meaningfully. "Fairly and meaningfully" are key words here, especially in a school setting. It may be argued that the "capable students" can read about the battle and narrate the action, while the "less capable" students paint the plywood and glue down the trees, and thus everyone participates and cooperates, but we are kidding ourselves if we think that the painters and gluers don't realize that they have been given a lesser responsibility and draw the exact self-esteem-damaging conclusions that educators want to avoid.

The other strategy urged for the middle school is peer tutoring. This is a widely used teaching device which takes many useful forms. Older students can teach younger students. A student who has already learned something can explain it to a classmate (often in the time-honored way of answering the whispered question, "What did she say the next step was?"). Also time-honored is the practice of using the kids who learned it after the first explanation to explain to the ones who didn't. This keeps them occupied while the teacher is busy with other tasks and may save the teacher the trouble of re-explaining it. Now these strategies, once driven by a student's reluctance to admit to the teacher that he didn't understand or a teacher's desperation to keep kids busy and quiet, have been elevated to the status of desirable teaching practices, especially at the middle school level. It is pointed out that older or more knowledgeable students often discover how superficial their knowledge is when they attempt to teach something they think they know, and this is certainly a valuable result of peer tutoring. Pride in being able to help and the growth of a more caring

school atmosphere are also mentioned as results of a peer tutoring program, and these too are desirable effects. Less entrancing is the suggestion that peer tutoring is a wonderful way for a school district to save money by using students instead of having to hire more teachers. Peer tutoring as a part of the learning experience where pride and helping are emphasized is one thing. Using students as unpaid teachers for a significant part of their day is quite another, especially when the temptation to use gifted students this way is bound to be almost irresistible. It is vitally important that *all* students use the greatest portion of their time in school pushing the limits of learning as far as they can go, and while peer tutoring can provide valuable learning experiences and social skills when used in a properly limited way, it should never be allowed to use up time when a student could be moving ahead in learning. Further, the people of a state need to take proper fiscal responsibility for public education, and obscuring the need for adequate financing by using student tutors as part of a "cost effective" funding policy is unconscionable.

So when the girls are worrying about their complexions, and the boys are worrying about their voices changing, and the teachers are muttering about "raging hormones," and the parents are trying to find out if the words to that rock song really are what they are afraid they are, what is a school to do? Let's try the word *flexibility*. That "wide range" mentioned in *Caught in the Middle* is just crying for a flexible system, and the middle school schedule is perfect for that. Students who move from class to class and from teacher to teacher can be grouped for instruction in dozens of different ways each week (maybe even each day.) How about a large, heterogeneous, multi-teacher, several hour language arts block with kids reading in groups according to ability some of the time, peer tutoring some of the time, sharing presentations part of the time, and working on individual projects part of the time, but always stretching their limits without limiting any one else's stretch. Work out a deal with the nearest high school to let kids go there for a class if that's what they need for stretching, or perhaps share faculty with the high school. A system that is based on flexibility doesn't hold any student down, doesn't push any student farther than she's ready to go, doesn't label any student, doesn't trap anyone in a track forever, and doesn't catch students anywhere, least of all in the middle.

THE VIEW FROM SACRAMENTO

Barbara Brandes

I don't know how many times I have begun this column by acknowledging that these are tough times for public education generally and for gifted and talented education in particular. Now is certainly no exception. Yet every day I am heartened in some way by the dedication — even the optimism and passionate commitment — which I see in colleagues. I certainly felt this way when we hosted a meeting in the fall of the recipients of the mini-grants from Project Open-GATE. These educators had competed successfully for very small grants to implement activities related to the essential purposes of the Jacob Javits Gifted and Talented Students Education Program — mainly to improve services for underrepresented students. I trust that projects are going well for those of you engaged in this important work.

We know that there is a great deal of anxiety about the status of GATE in the budget process this year. The California Department of Education, along with CAG, is opposing inclusion of GATE in a mega-item for categoricals as was proposed in the Governor's Budget. We are also receiving many telephone calls with questions about application requirements both for districts that currently receive GATE funds and for districts not currently funded. The following information is based on an assumption that efforts will be successful during the budget process to keep GATE out of a mega-item which would override administrative decisions about allocating GATE funds.

The tentative plan is to require only the GATE Data Application Update from districts that are currently funded. Although we are at the beginning of a new three-year application cycle for GATE in 1993-94, the program will sunset in 1994. Rather than require a full application that would be valid for only one year, we will be asking for the type of information annually reported in the application update. Information and forms related to the application extension process should be mailed out in March.

There are 327 districts that do not currently receive GATE funds even though the Legislature augmented the GATE budget in 1989 to fully fund the program and open it to all districts. Following this budget augmentation many districts did apply for and receive GATE funds. It is likely that there will be an opportunity for districts not currently funded to again consider applying for funds. Information related to the application process will be sent out this spring. Of course, the addition of new districts would have a fiscal impact on currently funded districts since the total state allocation for GATE would be the same. All of this adds uncertainty to an already difficult situation.

I am looking forward to a meeting of all the State Directors of gifted programs that is being convened by the U.S. Department of Education at the beginning of March. We will have an opportunity to preview the long-awaited federal report on gifted education which is likely to help set policy directions for programs throughout the country. This document will be helpful for us to draw upon as we plan for the reauthorization process in 1994.

Barbara Brandes is State Director for Gifted and Talented Education, CDE.

Good at Math

- Encyclopedias are good at math because they know their facts.
- Watches are good at math because they know their times.
- Kangaroos and bellboys are good at math because they carry.
- Police are good at math because they solve problems.
- Erasers are good at math because they take away stuff.
- Leftovers are good at math because they know their remainders.
- Lawyers are good at math because they can make a point.
- Bill Clinton is good at math because he is trying to make differences.
- Supermarkets are good at math because they have lots of products.
- Broken bones are good at math because they know fractions.
- Cooks are good at math because they can make pi.
- Pencils are good at math because they show their work.
- Musicians are good at math because they know their chords.
- A baby is good at math because it is an acute creature.
- Building blocks are good at math because they can add up.
- Lightbulbs are good at math because they are bright.
- Surgeons are good at math because they know all of the operations.
- Farmers are good at math because they produce products.
- Scientists are good at math because they know their formulas.

A joint project of Helene Semchuck's 8- and 9-year olds at The Mirman School.

World Class Standards for Middle School Students Who Are Gifted

by Julia Roberts

Much talk inside and outside of educational circles centers around world class standards. This conversation concerns education at all levels. This article focuses on issues which must be resolved if students will be afforded the possibility of reaching world class standards and on learning opportunities which will enhance the education of middle school students, including young people who are gifted.

World class standards conjure up various images. Ice skaters anxiously awaiting the judges' scores after the championship round of the Olympics. Basketball players running the floor in the finals of an NCAA tournament. Actors awaiting the announcement of the Oscars. These images are less distinct when the concept of world class standards is applied to middle school students and academic talent. In the name of education reform, there is a need to develop standards with enough specificity to provide challenge and direction. World class standards are not vague, nor are they static. The bar is continually raised as high jumpers reach new heights.

For anyone who believes in individual differences, it is obvious that one set of standards cannot appropriately challenge all students. It would be equally outrageous to require all seventh grade students to wear a size seven shoe. Recognizing individual differences should make educators and politicians set world class standards at two or three levels so that each student will have an appropriate challenge. It is time to move beyond minimum standards and stretch all students, including the gifted, to new heights and to truly world class standards.

The middle school years are a critical time for students. The Carnegie Report entitled *Turning Points: Preparing Youth for the 21st Century* stated that "middle grade schools...are potentially society's most powerful force to recapture millions of youth adrift, and help every young person thrive during adolescence. Yet all too often these schools exacerbate the problems of early adolescence" (*Turning Points...*, p 8). Another report, *No Gifts Wasted: Effective Strategies for Educating Highly Able, Disadvantaged Students in Mathematics and Science*, emphasized the tragedy of school failure. The report stated that "when disadvantaged children show prom-

ise in school, their loss to low expectations, boredom, and lack of support is doubly disturbing."

In addition to the cautions raised by the national reports in the late 1980's, the National Education Goals have established an agenda for excellence in our nation's schools. Two of the goals have clear implications for standards of excellence.

- By the year 2000, American students will leave grades four, eight, and twelve having demonstrated competency in challenging subject matter, including English, mathematics, science, history, and geography; and every school in America will ensure that all students learn to use their minds well, so that they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy.
- By the year 2000, U. S. students will be first in the world in science and mathematics achievement.

To reach these two of the six goals of America 2000, world class standards must be set, and educators must ask the key questions: Are middle school students, including those who are gifted, learning what they need to learn and are ready to learn? What strategies need to be in place in middle schools across the country to ensure that high expectations raise the floor of learning and that the ceiling of learning is lifted, allowing students to soar in areas in which they have interests, strengths, and talents?

An array of services and strategies in middle schools will enhance opportunities for middle school students to reach standards of excellence. These options must include a challenging curriculum, flexible planning for individual students, advanced classes, an appropriate counseling component, a variety of extracurricular activities, and mentoring opportunities. In addition, middle school students should explore the community for opportunities to develop their talents and strengths outside school hours. Finally, colleges and universities may provide opportunities for advanced learning on the weekends and during summers.

A challenging curriculum must be the hallmark of excellent middle schools. This curriculum must combine rich content and appropri-

ate processes (thinking, problem solving, and research skills) to actively engage all students in learning and authentic assessment. A curriculum that is based on interdisciplinary themes provides a framework which has the power to challenge students and to develop lifelong learners. A variety of learning activities will allow students to learn at a pace and at a level of complexity at which each one is ready to learn. Curriculum which reaches world class standards will offer challenging content and process and will engage students in developing a wide variety of products. A challenging curriculum removes the ceiling to learning to allow each student to learn what he/she is ready to learn and what he/she needs to know.

Flexible planning for individual students ensures that each student can learn what he/she needs to know and be able to do. Flexible planning allows students to learn what he/she is ready to learn without barriers. A middle school student who is ready for high school mathematics or foreign languages must be given the opportunity to take a combination of classes traditionally taught to middle school and high school students. Flexible planning must be based on information about the student's strengths, interests, and talents. As individual planning is anchored in information about the strengths, interests, and talents of individual middle school students, it is possible to remove the ceiling to learning and to develop a variety of strengths, interests, and talents.

Advanced classes must be a core element in middle schools which would have world class standards. At the middle school level there are students who are ready for more advanced mathematics or more advanced work in other content areas, and world class standards of excellence will be reached only if advanced opportunities for learning are offered. Talent searches for middle school students have pioneered off-level testing (testing intended for an older age group) which removes the ceiling from assessment. As middle school students have taken the SAT or ACT through the talent searches, the results have shown that there are middle school students who have learned advanced content and reasoned at complex levels, and who are ready for advanced classes. These opportunities for advanced learning will allow young people to learn what they are ready to learn. Certainly, advanced classes will remove the ceiling to learning and encourage schools to move toward the goals of America 2000.

An appropriate counseling component is

essential in schools reaching for world class standards. Counselors and teachers must understand the needs of middle school students who are gifted and have strategies for helping them aspire to appropriate goals. Counselors and teachers must recognize that the needs of gifted students are their strengths rather than their deficits. Building world class capacity involves the early identification of strengths, interests, and talents and developing them to their fullest potential. Counselors must work with students to explore appropriate personal and career goals based on individual strengths, interests, and talents. Appropriate counseling must lift the limits for middle school students. Counselors and teachers must recognize that social-emotional needs must be addressed if world class standards are to be achieved. They must know that, to quote Charlie Brown, "there is no heavier burden than a great potential."

A variety of extracurricular activities must be in place to develop strengths, interests, and talents of middle school students with authentic tasks and stimulating learning environments. Students who are inclined to view mathematics as an inviting challenge need opportunities to extend learning in activities such as Mathcounts, Odyssey of the Mind, Future Problem Solving, and Knowledge Master allow students to develop their gifts. In extracurricular activities student choice is the key. An array of extracurricular activities allows middle school students to engage in learning with no ceiling.

Mentoring is another strategy for extending learning beyond the classroom. Middle school students may be ready to explore possibilities in an interest or content area. If so, they will enjoy working with a mentor who shares their interests. Mentors can be college students, parents, or other adults. The key component in a successful mentorship is that the mentor and mentee share an interest and that both want to be involved. When mentoring is employed as a strategy, the ceiling to learning is lifted.

Discussion in education goes beyond standards and excellence to include equity. Is it equitable to offer the opportunities described above? Yes! If those opportunities are matched to individual student strengths, interests, and talents, middle schools move toward standards of equity and excellence. Learning opportunities must match and extend the interests of students, and they must match and develop their individual strengths and abilities. To do less is to prevent some middle school students from learning what they are ready to learn!

Julia Link Roberts, EdD, is director of The Center for Gifted Studies at Western Kentucky University. She directs summer programming for middle school students and has been director of a three-year Javits grant entitled "Enhancing Educational Opportunities of Gifted Middle School Students." The mailing address is Bowling Green, KY 42101. The phone is 502/745-6323.

Model Middle – The Greatest School for Gifted Kids (and other kids too!)

Good morning. It's great to have you visit Model Middle and see all the things we're doing here. Just stop in the office for a minute and get a visitor's pass, and we'll go right on to my first class.

We call this class the language lab. It's a double period, and we do all kinds of language activities here—reading, writing, speaking. We all like to read, but the really neat thing about this class is that we read books that we choose. My parents were really kind of worried about that at first. They thought we might spend the year reading nothing but dumb stuff—Sweet Valley High or great football heroes—but it isn't like that at all. First, we have a book list to choose from for most of our required reading. Some of the books on the list are ones that students have recommended over the years. Then the teachers asked people in various fields to recommend books about their subject that kids would like to read. The experts said they enjoyed picking books that they thought would say interesting things about their field *and* be fun to read. They add things to the list from time to time, and we let them know how we like the books, so the list changes. Even my mom likes reading some of my books. There are different kinds of fiction—mysteries, adventure, westerns, sci-fi, sports, even romances—and we have to read at least one in each category during the year. Sometimes a group of us will all read the same book and then meet and discuss it. Other times a group will read different books in the same category and discuss and compare them. Sometimes a discussion group will be like a talk show panel and have their discussion with the class as the audience. That's always fun. We have written assignments too—comparing books, discussing a character in a story, doing an outline of a sequel (or prequel) for a book, and of course we have to show good writing skills. We know that's part of what we need to learn, but doing it this way makes it more like real life and not just a class assignment. Some of our reviews get printed in our school newspaper, so it really is real life. Besides the required reading, we read our own books all the time too, and we keep a list of what

we've read. Having a book that we're reading is just something that we do all the time.

Speaking of the newspaper, students do all the writing and publishing (our faculty advisor does check it over). We take turns doing reporting, editing, paste-up, graphics, and all the things you have to do to make a paper. This is a GATE class, but we have reporters from other classes who dig up news and write stories, photographers and artists who do graphics, and kids who type and help set it up in the computer desktop publishing program. That way the whole school gets involved. We get to know a lot of kids that way, and there's hardly anything that goes on in our school that we don't know about.

In the language class we do lots of public speaking too. We give speeches, debate, have panel discussions, and put on plays. This requires a lot of research, but you really have to know your subject if you don't want to end up looking silly in a debate. Kids from the regular English classes often join in these projects. We tape them on video tape, and then other classes can watch them, or we can even take them home for our parents to watch.

My grandpa is retired now, but he used to be an English professor, and he wonders if we really learn grammar. I told him that we learned that basic stuff in elementary school and our teachers expect us to use it now.

We are lucky here at Model Middle because we have a computer lab, and all GATE kids begin with a keyboarding class so that we really learn to type. Then we can go on to word processing skills and, if we want, to some programming. Of course, these classes are open to all the kids here if they want to take them, but we have to. We like it because it makes writing so much easier. We can use the computers at lunch time if we want, and the parents have organized the Computer Busters, where parents take turns supervising the computer lab after school so anyone can do homework there. We just have to bring our own paper. It's great!

Math is different here at Model Middle. Instead of being a whole year, or a semester, the classes change at the quarter. All the kids at the

school have to pass tests to show that they can do certain kinds of math. If you pass the test, you can either take the test in the next area, or you can take the next class. The tests themselves are even fun, believe it or not. We have to do some problems on paper, sometimes we can use a calculator and sometimes we have to show that we can do all the operations ourselves. Some of the problems are just the ordinary number problems, some are word problems, and some of them are puzzles we have to solve. For part of the test, we have to go out and do real things, like going to the store and finding out how much certain kinds of food cost per ounce to see which is the best bargain or figuring out how many bags of cat chow we'd need to feed four cats for a week if they ate so many ounces each a day. (We had to keep track of all those cats for weeks to get a realistic average!) Parent volunteers go with groups of kids for this part. When we pass the test, we can go right on to the next area and we don't have to wait around for people to catch up. Some kids zoom right through all the tests and go into algebra and geometry right away, and some need to take a class. The whole school takes math this way, so each quarter you're in class with different people, the people who need to be learning this particular part of math. We even have some math whiz types who go over to Super Senior and take a math class there. Everybody's used to that kind of thing around here. Another thing we really like is going in for math competitions. Anyone in the school can try out for the teams, so sometimes we have the do-math-in-your-head geniuses for one competition, and another one may need the ones who can build ten-story buildings out of one thousand drinking straws and a package of miniature marshmallows. Then we send a reporter out and it all gets written up for the paper.

Because Super Senior is right down the block, we have an extra-special science program here at Model Middle. A few years ago we did a poll of students, parents, and teachers about what we wanted to learn and what they wanted us to learn in science, and we all agreed that we wanted to learn about a lot of different areas in science (what my grandpa the English professor calls survey courses). Oh sure, we'd had science in elementary school and we really had learned a lot, but in middle school this needs to be more organized, more, well, serious. So we have courses in biology, botany, astronomy, chemistry, physics, marine biology, physiology, and geology. Everyone in the school

has to take three of them, but we can take all of them if we want. Some of the science teachers from Super Senior come down for a period to help out, and sometimes we go up there to use the labs. Students from the high school come down to give demonstrations for our science classes, and that's actually part of their grade. That's always a lot of fun. When they enter some of the big science competitions, they always demonstrate their projects for us. The other great thing about science is that all of the teachers let us do a lot of experiments ourselves. We get background information from the book, then we have a chance to try things out. We haven't blown up the school yet, so the principal says we're OK. Having enough money is always a problem, but we try to find ways to do things like go to an observatory, or go rock collecting, or other places where real science is happening.

You have to be a good reader to be in our history class, even though we don't use an ordinary history textbook. Does that sound weird? It's because we read a lot, but in all different sorts of books - diaries, biographies, newspapers, magazines, anything that gives us the information we need. We find out tons of things about a topic and then we do projects to share what we've learned. We do individual work, or team up in pairs or groups, and we may present our projects to our class, or other classes, or maybe the whole school. Some of the kids who see our projects think we only do fun things in history and never any work, but that's not true. Research is hard work. One kid did a model of the battle of Gettysburg, with the whole battlefield on a huge board and fixed up with the stuff you use to do model railroad layouts, and then he showed how the entire battle went and ended with Abraham Lincoln dedicating the cemetery there and giving the Gettysburg Address. It was neat.

We GATE kids here do have one special, special thing that we can do. That's our Project Period. Because we don't need some of the basic skill courses that some of the kids do, the teachers decided that we could set aside two periods a week for special project time. This is when we do things that are not a regular part of the school curriculum (but they do have to be "educationally worthwhile," as the principal says.) One activity is the camera club. We each have to have our own camera and buy our own film, but we have equipment for developing and printing which was donated by a local photographer. Some of the kids have become

really good and won prizes in local contests. Another is the writers club. When that group meets, all you can hear is an hour of pencil scratching, except when they read aloud bits to each other for criticism. One girl is writing a novel. The computer gods get together in a corner of the computer lab, and we have a

chamber music group that practices. There's even a bird watching bunch. If someone has a special project or interest to work on by himself, he can do that. We make a choice for a quarter, and we agree to stick with it for the whole quarter. Then we can change the next quarter and do something else if we want, or we can stay with the same project. We usually make a video tape at the end of each quarter, with each group or person telling what they have done. We share these tapes with other schools, and have "camcorder pals."

The principal (and my grandpa the English professor) think the teachers who get involved with us GATE kids are a little bit weird, and I guess maybe they are, but that's part of the whole thing. They treat us, not like adults, because of course we're not adults, but like human beings they respect. They don't expect us to know everything, but they work with what we do know and don't act like we're "only kids." They'll listen to any idea, and if they think it's dumb, they'll tell us why and give us a chance to answer objections. They're interested in both their special area and in what's going on in the world, and they level with us. But don't get the idea that they're not strict when they need to be, because they are. They say that since we're GATE students, we have an extra responsibility to contribute to society, and they don't let us be lazy or get away with anything. We can have a lot of fun with them, but we know we need to treat them with respect too, and somehow the idea of taking advantage of a teacher never even seems like fun.

It's been great showing you around our school, but I have to go now. My history group meets in five minutes. We're preparing a panel discussion on what might have happened if Paris had decided to give Athena the golden apple as "the fairest" and gotten wisdom instead of the most beautiful women in the world as his wife. I'm Athena, and it's not easy to get inside the mind of a Greek goddess. If you like, we'll loan you the video and you can see how it comes out. Don't forget to pick up a copy of the paper when you go through the office. The language class did a great editorial page on whether or not school uniforms were a good idea.

Model Middle was written using the input of students Ken Wentz, Twenty-Nine Palms; Jenny Dunn and Casey Dunn, Twain Harte; Louis Gray, Paradise; Luke Seeman, Eureka; Darla Grantham, Eureka; and Nathan Hubbard, Crescent City.

The Distant Space

The distant space
Of mysteries,
Questions,
And answers.
The stars,
How were they made?
Are there aliens like us?
Nobody knows
Out there
In the distant space.
Needles of questions
Pierce minds
Of the young
And the old.
If we know,
We are fulfilled,
Until then,
The distant space remains,
Untouched.

Kevin Smith, age 9

Stars

Swirling like thick rich honey
In black infinity
These tiny diamonds
Dance
Like dandelion fluffs drifting
Away.
These miniscule glowing lights
Smile in the sky.
The glistening stars
Glide like swans
Away, away
In the night.

Crystal Y. Chuang, age 9

Planets

A vast ebony floor
Full of marbles.
Each one unique
And different.
Swirled with the
True black of the night.
It's the game of
marbles.
It's the game of the
planets.

Amy Andelson, age 9

Space Our Home

Space is an aperture filled with
gleaming stars,
A galaxy with spherical objects,
A place replete with constellations.
Space holds our planet, our
country, our home.

Cody Hurdock, age 9

Student Poems from

The Mirman School,
Los Angeles

Middle School Survey Report: Impact on Gifted Students

Executive Summary

by Mary Ruth Coleman and James J. Gallagher

The purpose of the Gifted Education Policy Studies project on gifted middle grades learners was to investigate current attitudes of educators from both the middle schools movement and gifted education. We believed that cooperation between the groups was needed in planning appropriate services for gifted middle grades students, and yet little information was available to help guide these collaborative efforts. As a first step to understanding the attitudes of educators from both groups, we designed a survey to identify areas of concern and mutual agreement on services for gifted middle grades learners.

The survey focused on six interest clusters:

- (a) grouping strategies,
- (b) identification issues,
- (c) curriculum modifications,
- (d) teacher preparation,
- (e) program evaluation, and
- (f) addressing the social/emotional needs of gifted students.

The first section included 23 Likert scale questions reflecting these six areas of concern, which asked participants to rate their opinions from (1)—strongly disagree to (4)—strongly agree; the option of (N)—no opinion was also available. The second section of the survey asked respondents to select their top three concerns (of the six cluster areas) and to rank their selections by priority. The third, and final, section invited respondents to provide comments or additional thoughts on the needs of gifted middle grades learners.

We sent the survey to 400 participants; 100 randomly selected from the mailing lists of four professional organizations: The Association for the Gifted (TAG); The National Association for Gifted Children (NAGC); the National Middle School Association (NMSA); and the Association for Supervision and Curriculum Development (ASCD). The return rate of 84% showed

high interest in the topic and creates added confidence in the findings.

A Multivariate Analysis of Variance (MANOVA) compared the middle school and gifted education responses on the survey clusters. We split the six original clusters into 10 clusters after examination of item interrelationships. The 10 item groups were:

- (a) grouping practices,
- (b) social development,
- (c) curriculum,
- (d) program differentiation,
- (e) emotional support,
- (f) teacher preparation,
- (g) identification issues,
- (h) collaboration,
- (i) teacher assignments, and
- (j) program evaluations.

The MANOVA revealed significant differences between the two groups on the clusters; however, with the large sample size, which predisposes toward differences, we decided to move to an analysis of effect size, which gives a description of how different the groups really are. Effect size is determined by dividing the

differences in group means by the total group standard deviation. An effect size of .8 is considered to be large, .5 is moderate, and .2 is relatively small (Cohen, 1988).

We analyzed the second section of the survey, the ranking of

The two clusters that did elicit
opposing responses were
"grouping practices"
and
"social development."

most important issues, by comparing selections made by both groups. We used qualitative analysis to identify themes in the third section and we asked judges to code the comments. The results indicated that although there were differences between the two groups, most of these differences were in the intensity of agreement and not differences that indicated opposing positions. The two clusters that did elicit opposing responses were "grouping practices" and "social development."

Comparisons of Means for Gifted and Middle School Respondents on Survey Clusters

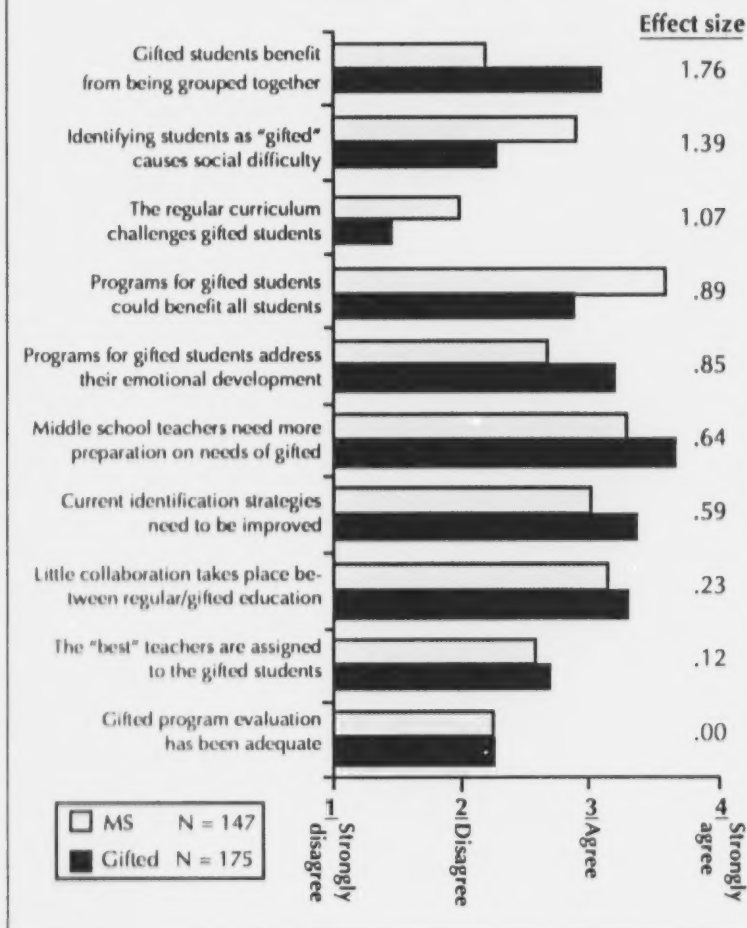


Figure 1

1. Grouping Practices

The summary statement that typified this cluster was: *Gifted students benefit from being grouped together*

This issue showed the widest discrepancy between the groups. Educators from the middle school group felt that gifted students may not benefit from ability grouping whereas educators from the gifted group felt that grouping was important to meet the needs of gifted learners. The effect size of 1.76 indicates that these are markedly different viewpoints on this issue, which clearly separated these two groups of educators.

2. Social Development

A summary statement for this cluster was: *Identifying students as gifted causes social difficulty.*

Educators from the middle school agreed with this statement. Their feelings seemed to be that the "gifted" label and accompanying special program often create social adjustment problems for the gifted students. The educators of gifted students disagreed with this statement, feeling that "giftedness" does not necessarily interfere with social development, and that the label and services provided assist gifted students with their social adjustment. An effect size of 1.39 indicated a major separation in the groups.

On the remaining clusters, the differences indicated that the groups had the same opinions on these issues but differed in how strongly they held these opinions.

3. Curriculum

These items addressed whether or not the regular middle school curriculum could meet the needs of gifted students. The summary statement typifying this cluster was: *The regular middle school curriculum is challenging for gifted students.*

Both groups felt that the standard curriculum is not challenging enough for gifted students; however the strength of this perception varied by group. Although the middle school educators disagreed with this statement, the educators of gifted students "strongly" disagreed. With an effect size of 1.07, this difference in intensity seemed important.

4. Program Differentiation

The summary statement for this cluster was: *The program designed for gifted students could benefit all students.*

The middle school educators voiced strong agreement with this sentiment, whereas the educators of gifted students expressed mild agreement, feeling that, to some extent, components of the program for gifted students would be good for others as well. The effect size of .89 does indicate that these groups differed in their intensity of agreement with the statement.

5. Emotional Support

The summary statement for this cluster was: *Current programs for gifted adequately address emotional development for gifted students.*

Both groups agreed with this statement. However, the educators of gifted students strongly agreed, feeling that programs for gifted students do, in fact address the emotional needs of the students and that sufficient social sup-

port and attention to their affective development is included in programs for gifted students. The large effect size (.85) indicates that the intensity of feelings differs for the groups.

6. Teacher Preparation

This set of items addressed whether or not teachers of middle grades students have enough preparation to meet the needs of gifted students. The summary statement was: *Teachers at the middle grades need additional staff development in the characteristics and needs of gifted students.*

Both groups agreed with this, with the teachers of gifted students strongly agreeing. The effect size of .64 indicates a moderate difference in the intensity of agreement between the groups. This area seems to be a point of mutual concern and may be a point of future collaboration as well.

7. Identification of Gifted Students

This cluster looked at two issues – the failure to recognize underachieving gifted students, and the need for student identification in order to assure appropriate services. The summary statement was: *Current identification practices need to be improved.*

There was overall agreement in this area. However, the focus was slightly different. The middle school educators felt that current practices overlook many students, whereas the educators of gifted students focused on the need for identification to assure services. The moderate effect size of .59 indicates that the groups reported fairly similar views on these issues.

8. Collaboration between Regular and Gifted Education

The summary statement was: *Little collaboration takes place between educators in regular and gifted education on curriculum development.*

This area seemed particularly important given the middle schools philosophical emphasis on interdisciplinary units and the inclusion of thinking strategies within the curriculum. Both of these areas have been extensively used in planning differential education for gifted students. The groups agree that little collaboration has taken place, and the effect size (.23) indicated that their feelings are quite similar on this issue. Both groups seem to feel that collaboration would be mutually beneficial.

9. Teacher Assignments

The summary statement was: *The "best" teachers are assigned to teach the gifted students.*

We included this statement because it is a complaint sometimes voiced; however, the group responses indicated neither agreement nor disagreement. Both groups fell in the area between agreement and disagreement, indicating that excellent teachers, as well as poor teachers, can be found in all areas of education. The effect size of .12 indicated no real difference between the groups on this item.

10. Program Evaluation

The summary statement was: *Evaluation of gifted programs has been adequate.*

Both groups disagreed with this statement, indicating that program evaluation is an area that needs attention, and there was no difference between the groups on this cluster.

Most Important Issues

On the ranking of most important issues, the groups were also similar. The top three concerns of the middle school educators were: improved curriculum, attention to grouping practices, and teacher preparation. The educators of gifted students ranked curriculum, teacher preparation, and appropriate identification as their top three. When we looked at the ratings for the second most important issue, identification practices emerged for the middle school educators and grouping was included by the gifted education respondents. These results again indicate that we need to pay further attention to appropriate grouping strategies, and that collaborative efforts need to address curriculum differentiation and teacher preparation as priority areas.

The survey results indicated some clear starting points for communication and collaboration between middle school and gifted education. Although the focus of this report has been on the needs of gifted students and the recommendations made address their needs, we understand that many of the following suggestions would be appropriate for all middle grade students. The following directions would seem to be warranted:

1. Initiating joint efforts between middle school and gifted educators to provide teacher preparation to ensure that all middle school teachers have the knowledge and skills to meet the needs of gifted middle grades students.

Important Issues when Using the Middle School Model with Gifted Students

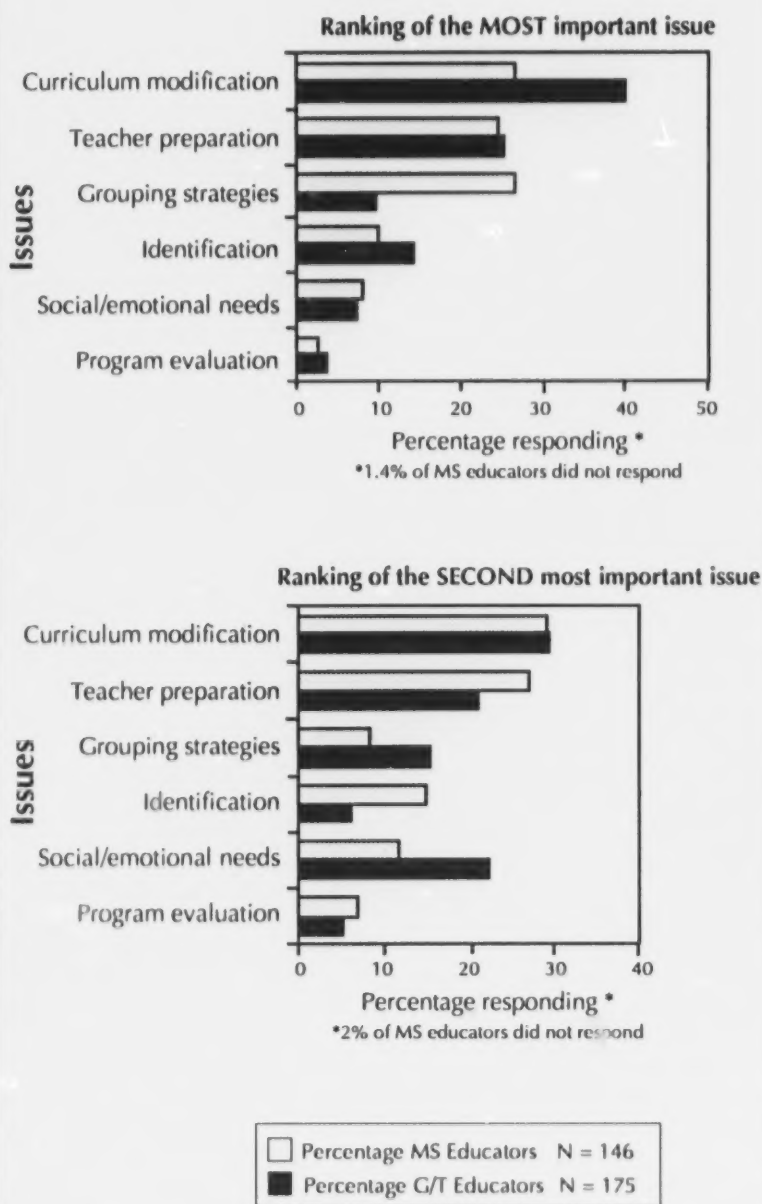


Figure 2

Permission is granted by the researchers to reprint as desired.
Copies of the complete study are available from
Gifted Education Policy Studies Program,
137 East Franklin Street, Chapel Hill, NC 27514;
919/962-7373.

2. Collaborative interdisciplinary curriculum development, with a twofold focus:
 - (a) on strategies to ensure an appropriate pace and challenging level of learning for gifted middle grades learners; and
 - (b) on ways to extend some of the experiences provided through the gifted program to other students who could benefit from them (e.g., activities to enhance problem solving, enrichment field trips, opportunities for independent/interest-centered learning).
3. Creating ways, at the building level, to address the affective needs of middle grades gifted students through teaming, counseling programs, and advisee-advisee relationships designed to assist gifted youngsters with their social and emotional growth.
4. Exploring a variety of ways to group students for instructional purposes which match the needs of the students and the requirements of the curriculum to ensure challenging experiences for gifted students.
5. Designing and using program assessment strategies that can measure the full range and depth of outcomes for gifted students in order to evaluate the effectiveness of services for gifted middle grades learners.

It is reassuring to note that educators from both middle school and gifted backgrounds share many of the same concerns. We believe that if we combine the knowledge and expertise of both groups, the result will be an exciting collaboration that can benefit many students.

Reference

- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

This research was conducted by the Gifted Education Policy Studies Program at the University of North Carolina in Chapel Hill. The views expressed in this presentation are those of the presenter(s) and are not necessarily shared by the U. S. Department of Education, Office of Educational Research and Improvement that provided funding under grant number R206A00596.)

Joseph Kerr Middle School A Year-round School with a GATE Mission

by Sharon Freitas

Hanging on the office wall, visible in each classroom, and printed on the school's letterhead, the mission statement reads as follows: "An effective school emphasizes an atmosphere of educational excellence. Students are encouraged to be successful, to reach their potential, and to exhibit responsibility for their own academic and social behavior." This suburban, year-round school with 1800 seventh- and eighth-grade students includes a 20% identified gifted and talented population. Many of these GATE students have participated in full-time "alternative" GATE classrooms for three to four years at the elementary level and enter the middle school with advanced skills, especially in the area of math. Because of this and other special considerations, the staff at this school has developed a far-reaching and comprehensive GATE program with three outstanding components available regardless of which of the four tracks the student is enrolled in. These three areas offer a variety of activities which promote academic excellence, including the availability of algebra and geometry on campus, and the RENAISSANCE Business, Community Partnership Program.

Activities to Promote Academic Excellence

The principal for many years, Dr. Arnold Adreani stated in a recent interview that "the school goal is to serve all GATE students on all tracks by having a balance in a program that includes both an academic and enrichment focus." Being a parent of three identified MGM students who are now attending either a university or graduate school, Dr. Adreani personally knows that GATE students want to do it all. At his school, GATE students with special needs or interests are individually counseled and scheduled so that they can participate in as many activities as possible. An example would be students in a CORE program who are also eligible for Jazz Band, Concert Band, and student government. Personally designed schedules for GATE students are made so that creative ways can be utilized to allow a student to access CORE programs and all of these specialized electives. Add to that the availability of several academic competitions such as Silver K, Academic Olympics, Odyssey of the Mind, National Knowledge Master, Science Olympiad, etc....and you have very busy students. Many

times students choose to "rainbow" across tracks, attend an optional seventh period after school, or be on campus during their off-track, vacation time. One very supportive arrangement for a student who cannot fit it all in is the availability of GATE physical education for 7th period after school. This allows a student to participate in six academic classes including either advanced music or student government. Both GATE and School Improvement Program funds are used to provide the appropriate teacher for the 7th-period class.

Accelerated Math Program

During the last eight years, the number of students ready for Algebra at 7th grade increased due to two trends. One was the acceleration made available at the elementary level both within the GATE 6th-grade classes at four sites and occasionally within a regular 6th-grade classroom due to a student's specific academic aptitude for math. The second is the fact that many students at the elementary level participate in the Academic Talent Search Program at the nearby California State University, Sacramento campus. Students who complete Algebra or Pre-Algebra in six weeks during the summer need higher levels of math at both 7th and 8th grades. Joseph Kerr Middle School first made arrangements for their math students to be concurrently enrolled at Elk Grove High School, about one-half mile away. When the group of students commuting via bicycle down and back each morning began to resemble a full fledged caravan, the math department decided to offer both algebra and geometry to all students who demonstrated readiness. This past year, two sections of geometry on two different tracks were offered, with an additional option of enrolling in a "cable" geometry class being broadcast from the television studio of the new high school in the district. As the district is always concerned about making equal programs available at each school, the use of cable instruction is growing. Again, the use of GATE funds as well as a special technology grant has made this a reality.

RENAISSANCE Program

Successful student support involves the sponsorship of the RENAISSANCE Business, Community Partnership Program. Incentives, provided both at school and within the com-

ON THE LIGHT SIDE

by Jean Watts



Well, now what?

munity, are given to achieving students. Periodically, students are given prizes, as well as specially colored student body cards, identifying stickers, etc. which can be used for certain student privileges, discounts, and special off-campus activities. Full pages of the local newspaper are devoted to each of the award assemblies with names of all the achieving students listed.

Academic Offerings

Mary Orrick, GATE site coordinator, states, "Many changes have taken place over the years, and we are continuing to examine and adapt our Academic GATE program each year in an attempt to best meet students' needs." For several years, all 7th-grade GATE students have been offered a GATE language arts for a two-period block. At the 8th-grade level, a new "Challenges" elective has replaced the Honors Social Studies of years past. This elective has four units, Kerr's Kourt (mock trials and the judicial system), Survey of Issues (students do surveys and present real data to the school staff), Art in Action and a Technology unit involving robots, computers and video production.

"At times the task of meeting students' needs is awesome, as the school serves over 300 GATE students who have been identified for very diverse reasons on four different tracks," Mary continues. Identification

can be in one or more areas, such as high achievement, specific academic ability, intellectual ability, or multi-dimensional talents. The ethnic make-up of the GATE program reflects that of the school, and there is an increasing number of referrals from recent immigrants into our area. "Our students are encouraged to stretch themselves in curricular areas outside our GATE classes. For instance, 19 of our GATE students also participate in the student government, 15 are peer leaders, and 7 are on the yearbook staff. A large number play an instrument in band or sing in choir."

The staff members who have been designated as GATE teachers include four 7th-grade Language Arts instructors and five 8th-grade teachers who share the "Challenges" elective. As the GATE staff, they search out opportunities to perfect their skills by attending inservices and conferences, such as the CAG statewide conference. The teachers are enthusiastic about their subject areas and are skilled and flexible in dealing with GATE students. They state, "We are excited about our GATE program at Joseph Kerr Middle School and what the future holds for our students."

GATE Goal

It is the intent of the GATE program at Joseph Kerr Middle School to challenge the students in independent study, research, and higher level thinking skills so as to nurture and celebrate each student's individual interests and talents. Additionally, development of students' sensitivity and responsibility to others is fostered.

GATE objectives include activities to: build students' deductive and inductive thinking skills, help students to think critically on a daily basis, build self-esteem and develop leadership potential, increase opportunities to learn technology, apply technology as it relates to current trends in the workplace, and look at careers and prepare for them.

Mary Orrick is an 8th grade Social Science teacher, who is released one period a day with GATE funds to provide leadership and support to the staff. Nine additional teachers are involved with the program. At the 7th-grade are Rose Wooldridge, Joanne Fleetwood, Mark Bandy, and Sue McIntosh. The teachers at the 8th-grade are Pat Nelson, Kathi Goldsberry, Judy Clemons, Dave Hieronimus, and Dan Newton.

Sharon Freitas is GATE Coordinator of the Elk Grove Unified School District. She can be reached at 916/686-7759.

Tanka Poems

from Twin Peaks Middle School,
Poway, California

Splish, Splash

Splish, splash,
Rain gently slipping away from
the clouds,
Dancing crystals, falling, falling,
To the parched desert
Bringing life and hope.

Ellen Wei

Fire

The fire burns through the forest
Letting nothing stand in its way
Until dusk, when the fire
dissolves
Into silent embers.

Cindy Freund

Pixie Dust

Tiny fairies with silver wings
Dancing in the cloudless sky.
Their muted glow
Shining like distant stars
In the night.

Lindsey Dillon

Grains of Sand

Waves beat against the shore,
Each brings back a grain of sand.
Some grains of sand are happy
thoughts,
But, most are
The sorrows of the world.

Megan Moriarty

Differentiating the Curriculum at Twin Peaks Middle School

by Lynn Astengo

When asked last May to be the GATE Coordinator of our middle school, I accepted with reluctance. At that time, our District was presented with a controversial issue—the grouping of GATE students in homogeneous and heterogeneous classes. The real issue was curriculum that was differentiated and appropriate to gifted students. Having taught gifted students for over twelve years and being a parent of a two gifted students, one identified and one not, I took these issues very seriously. I was sensitive to the issues at hand, as they involved me not only professionally, but personally.

Encouraging our qualified teachers to improve their differentiation is my greatest challenge. In the summer of 1992, the GATE Coordinators of our District met with a parent group, our Assistant Superintendent and Elinor Ruth Smith, a consultant in gifted and talented education. Our purpose was to provide our wonderful teachers with a series of seminars that could further their expertise in teaching the gifted. The teaching strategies presented focused on differentiated curricula presented in both homogeneous and heterogeneous classes.

Our teachers use a content-process-product learning environment with a thematic approach based on Bloom's Taxonomy. These strategies not only serve a homogeneous class, but allow teaching heterogeneous classes without the verbal stigma, "You are GATE and will do this project and/or you are not GATE and will do the less challenging activity." Our goal is to meet the needs of all students while providing a differentiated curriculum for gifted students.

Beginning at the knowledge level, a teacher is able to provide an introduction to all students in a particular lesson. The comprehension step is noted by checking for understanding. Our teach-

ers have become well versed in this step through their attendance at district-sponsored "Clinical Teaching" seminars. The application step, provided for all students, may be expanded with the faster learner. By being aware of various thinking levels and learning styles, the differentiation here is subtle. We are familiar with Gardner's Multiple Theories of Intelligence and realize the students in our classroom will respond to the next three steps of Bloom's Taxonomy differently. The teacher's challenge is to encourage higher order thinking skills by using the content-process-product learning environment.

By appropriate questioning, creating "what if" situations and suggesting alternate outcomes, the teacher can reach the analytical and synthesis and evaluation process. Research activities provide these thinking levels and offer the student the challenge to reach the application level. Nancy Polette's *Research Without Copying* encourages students to use their higher order thinking skills. She believes students can "...locate, analyze, evaluate, and synthesize information..." She states one of her goals is "...to encourage students to think critically about what they read and hear...and to allow students to use information in a variety of ways." We should make that our highest goal.

The differentiation may be unnoticed. In my homogeneous GATE class, I have had students' parents respond to evaluation letters by stating that their child is challenged, loves school and feels motivated. I have also had parents ask, "When is GATE going to start?" In response to this question I would say that it starts with the challenges that we provide daily to each uniquely different student. Our job as teachers is to identify that unique "differentness" and teach to it.

Lynn Astengo is the GATE Coordinator at Twin Peaks Middle School in the Poway Unified School District.

A Consistent Commitment

A Conversation with Bruce DeVries

From Coalinga, where he grew up, to Ukiah where he now guides a school from the principal's office, Bruce DeVries has strong roots in California's Central Valley and an equally strong commitment to gifted education. This began in 1963 when he was asked to teach a class of highly gifted sixth graders in the Cupertino School District. The next fall the district asked him to take over and develop the gifted program.

That first year he "researched everything on gifted education" and visited programs all over California and in other parts of the country. He called it a situation "where you learn on the job" since at that time there were few gifted programs in place to use as models. He began with a class of fifty students and built the program to one which served more than 3,500 gifted children in grades K-8. Included was a magnet program for highly gifted underachievers, a development of which he is justifiably proud. He puts flexibility and innovative thinking at the top of the list of important characteristics for educators who work with gifted students. He flies his own airplane around California, which sounds pretty flexible and innovative too.



The Future of Gifted Education

One of the most important issues facing gifted education today is apathy. So many of our efforts today are being made on behalf of the at-risk child. We need to be sure that we do not forget the gifted students and look at the potential for contribution to society that they have.

Gifted education needs stronger leadership in school districts from superintendents and boards of education, and we need to make certain that gifted programs have coordinators with a real interest in gifted education. In these days of financial stringency, this won't be easy, but it will pay big dividends in our future.

We need equally to make sure that these programs are mandated at the state level so that every child has the same opportunity to participate, no matter if he lives in a large urban center or a rural area.

Special training for teachers is very important to the success of a really outstanding gifted program. These students need to be challenged as individuals, and a trained and sensitive teacher can raise self-esteem and improve the students' ability to avoid regarding themselves as "different."

It's also important to use a wide variety of assessment tools to identify gifted students. We should stress different types of "giftedness," such as scientific or mathematical ability, verbal ability, and literary, musical, or artistic talent.



Thirty years in the field of gifted education have not slowed Bruce DeVries down nor dampened his enthusiasm. He continues to keep up with the latest thinking in the field and attends conferences all over the United States. He is frequently a presenter of workshops and a keynote speaker, and he is a tireless advocate for the gifted to see that "they get the best ... what they deserve."

He has served as president of CAG and continues his active participation in many facets of the organization. As a principal he has used the techniques he learned from gifted education and applied them to the successful operation of a school. He had the first Distinguished School in Mendocino County. He attributes this achievement to his experiences in gifted education.

When his colleagues in CAG speak about Bruce, they talk about his consistent commitment to gifted education, a real gift to the gifted students of California.

Middle School Demonstration Sites

by Ron Fontaine and Bill Jones

Just as *Caught in the Middle* provided the leadership and impetus for the instructional innovation seen in the current restructuring reforms in California's schools, so too did the 1992 CAG/CDE paper dealing with differentiated curriculum encourage middle schools to move quickly to demonstrate these new concepts. A number of schools statewide answered the CAG invitation to become demonstration sites, to take the curricular guidelines, improve their offerings for GATE students, and to invite others to see what they had accomplished. These middle schools have identified two to four dates each year when visitors are invited to observe their interpretations/demonstrations of what is meant by the depth, complexity, novelty and pacing concepts within differentiated curricula.

Visitors are offered a schedule which allows not just classroom visitations, but meetings with project teachers and their coordinators or principals. Time is arranged to talk with students and parents as well. Teachers in the demonstration teams have agreed also to provide a video tape and written units of study which will illustrate the specific programs in each demonstration effort. These products will be available through the CAG office in Fall 1993.

Four middle school ventures in differentiated curriculum clearly reveal the wide breadth of possibilities for innovation in developing curriculum for the gifted student. First there is Luther Burbank Junior High in Burbank. Facilitated by their dynamic principal Donna Coffey, five teachers deal with a self-contained sixth grade class and interdisciplinary social studies/English classes at the seventh and eighth grade levels. The teachers have worked with CAG consultants to utilize the broad theme of *change* in their investigations of the Renaissance and the American Civil War. Visitors might observe students assuming the perspectives of Thomas Jefferson, Franklin D. Roosevelt or Jesse Jackson in explaining the Civil War.

GATE coordinator Judy Witt has facilitated an eighth grade interdisciplinary portfolio demonstration with a team of three English teachers

at Olive Peirce Middle School in the Ramona Unified School District. The classes involved are homogeneous and cluster groupings. The portfolio project includes science, math and social studies selections which students have chosen to represent their learning for the quarter, as well as English examples. Visitors to OPMS will be able to see the students working with partners to defend their selections and help assess the learning that has occurred. A video of portfolio day will be available for viewing and conference time with GATE teachers, parents, and students will be provided.

A third demonstration is offered by Ventura Unified School District where gifted students from all four Ventura middle schools (Anacapa, Balboa, Cabrillo and DeAnza) are provided an incremental program which allows each student to examine and study leadership concepts in classroom units where the elements of leadership are analyzed. Students are then allowed to try out these concepts by participating in community service projects in Ventura. All activities finally culminate in a special leadership conference at nearby Westmont College. Guided by GATE coordinator Margaret Gosfield, teachers from the four Ventura middle schools are able to provide demonstrations of differentiated curriculum in their hands-on study of leadership.

Finally, Martin Luther King, Jr. Junior High School in Sacramento's Grant Joint Union High School District offers a seventh-eighth grade interdisciplinary team which teaches English/social studies/math and science in a core approach to differentiated curriculum. The team uses the broad themes of differentiated curriculum in units of study dealing with the Western Movement and Elizabethan Times. The program is facilitated by coordinator Ken Machado.

The dates for visitations at these programs are listed on page 3.

Ron Fontaine is Director of Special Projects and Bill Jones is a principal in the Kern High School District.

They may be reached at 805/631-3109.

TECHNET

Note from the
TechNet Editor

Terrie Gray

As you read through this and subsequent TechNet articles, please evaluate the featured unit's appropriateness for gifted students by asking these questions:

- Does the study allow for elaborate, complex and in-depth investigation of information?
- Does it cross or integrate subject areas?
- Does it offer opportunities to reconceptualize existing knowledge or create new knowledge?
- Does it support self-initiated and self-directed learning?
- Does it promote understanding of self and community?
- Does it encourage creativity?

This list of questions is adapted from writings of A. H. Passow (as quoted by Sandra Kaplan, p. 127, in *Critical Issues in Gifted Education, Defensible Programs for the Gifted*, Vol. 1) I hope they can help you identify and formulate appropriately differentiated curricula.

Don Polen, a mentor teacher in Chico Unified School District, has been a technology pioneer. Not only has he been in the forefront, along with his colleagues and administrators, in transforming Chico Jr. High School into an model of effective and appropriate use of classroom computers, he has served as an example to his peers by introducing electronic technology into the science curriculum. This month's TechNet column features his new Life Science Class.

Chico Junior High is becoming more multicultural each year. In an effort to respond to the demands of the students' varying cultural backgrounds, as well as their varying ability levels, Mr. Polen decided to free the Life Science class content from its sequential text-base to make it more aligned with the new state science frameworks, as well as to make it problem-based, and flexible. To help students see themselves, and all people, as a part of interdependent and interactive networks of organisms, Mr. Polen structures class activities to enable students to discover how each group of plants and animals fits into the larger context of its ecosystem,

rather than having them study each animal class separately.

Students begin by participating in "Decisions, Decisions: The Environment," a simulation by Tom Snyder. This commercial product presents to the students common environmental problems about which they can make choices from among several options with varied consequences. Each choice yields a specific effect and an additional problem with its attendant possible courses of action. (For example, the townspeople must choose either to ignore possible pollution in a swimming area, or to treat it chemically or biologically.) "Decisions, Decisions: The Environment," introduces basic environmental awareness issues and assists the students to view problems from a variety of viewpoints.

"Decisions, Decisions" is intended to be used in a one-computer classroom and is available in both Macintosh and DOS formats. The activity is conducted in small groups, or as an entire class. The greatest problem with the program is that the simplicity of the game does not match the difficulty of the reading material. One strategy for dealing with this discrepancy is to assign strong readers in a heterogeneous classroom "Expert" roles so they can present difficult material to their teammates.

Following this introductory activity, several local environmental issues are investigated in greater depth, including:

- land utilization (green belts, housing developments)
- waste disposal
- endangered species
- water pollution
- air pollution.

The class decides on a project for the remainder of the unit. The wetlands is used as a typical ecosystem to study the biotic and abiotic interaction.

In Mr. Polen's class, topics are studied through standard text work, through library research, and through observations at community sites. Additional resources which prove invaluable include the information data base from SimEarth, *Earth Quest*, *Earth Quest Ecology*, and Optical Data's *Science Sleuth* videodisk fea-

turing an investigative approach to environmental issues.

After extensive class research, Mr. Polen's next step is choosing a real problem to investigate. Local problems have recently included several in the *Man vs. Nature* domain:

- A developer wants a permit to build in a Meadowfoam habitat
- The salmon population in Little Chico Creek is declining
- Paradise—a town of 40,000—voted against putting in a sewer system even though there is coliform bacteria contamination in surface water
- The county landfill is almost full; a new site is needed.

Once a team of students has selected a problem, they research which species besides people are affected by the conflict. They analyze the information and take a position. Their research and conclusions are summarized for possible presentation in the form of an original HyperCard stack to a public decision-making body such as the City Council or the Park Commission. This presentation also becomes part of Open House and Science Fair demonstrations.

The following is a summary of a simplified HyperCard procedure developed by Mr. Polen, and used in the context of this Life Science class. A classroom teacher can use this model in at least three ways: 1) to create templates for the students to fill in; 2) to use it as a method for introducing students to creating their own HyperCard stacks; and 3) to organize material for whole-group instruction.

Simplified HyperCard Procedure

1. Create a New Stack.

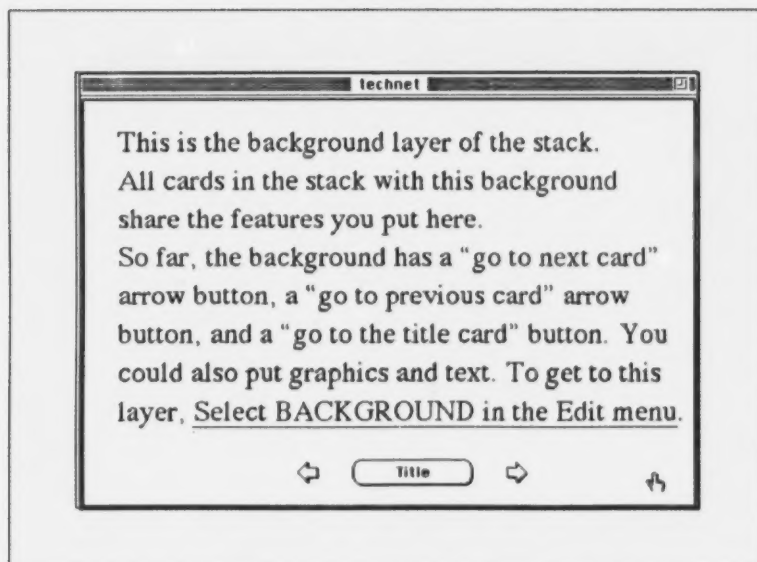
- a. Open the HyperCard program (Make sure UserLevel is set to SCRIPTING. Check the card Before the Home Card. OR Click on GO menu, drag down to MESSAGE, and type in the message box—Set UserLevel to 5—press RETURN.)
- b. Click on the FILE menu, drag down to NEW STACK, and release. Give the stack your name. Make sure the box for *Copy Current Background* is EMPTY. Click NEW.

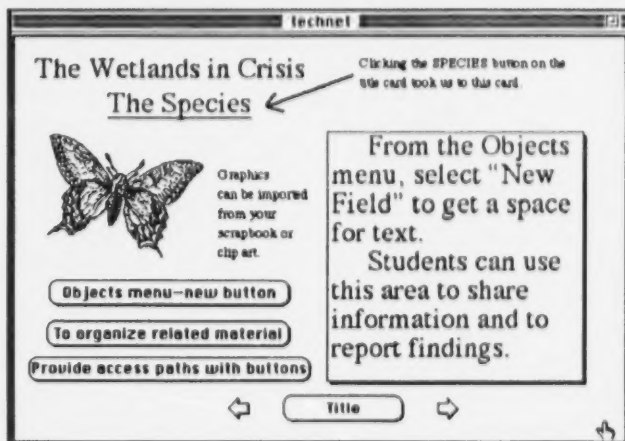
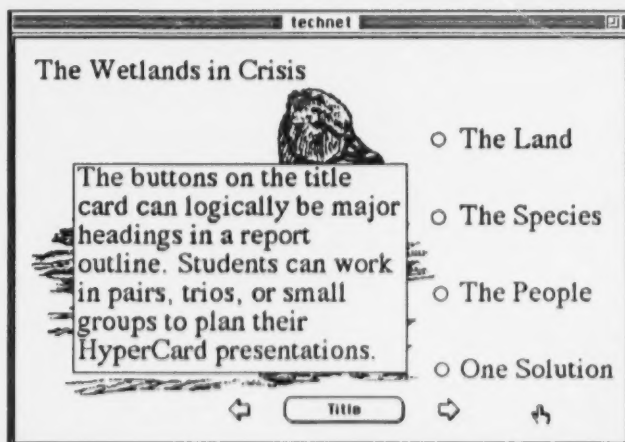
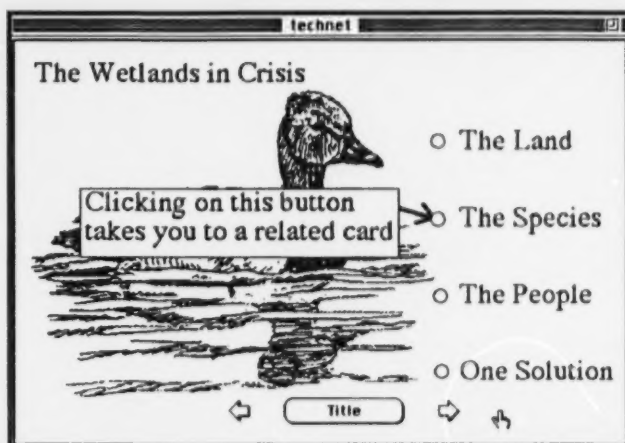
2. Put a border and title in the BACKGROUND.

- a. Click on TOOLS menu. Drag all the way through the rectangular array of tools to move the tool box onto the screen where it will stay open all the time.
- b. Click on the EDIT menu. Drag down to BACKGROUND and release.
- c. Double-click the LINE tool to select line width.
- d. Click the RECTANGLE tool.
- e. Drag from the upper left to lower right corner of the screen.
- f. Double-click the PAINT TEXT tool to choose desired font. Click OK. Type the stack/report title anywhere you want it on the card.
- g. Select the BROWSE tool (the hand).

3. Put navigation buttons (arrows forward and back) on the background.

- a. Open OBJECT menu: Select NEW BUTTON.
- b. Double-click on the new button that appears on the screen.
- c. Click ICON and choose an appropriate picture; click OK.
- d. Double-click on the new button to see the dialog box again.
- e. Click TRANSPARENT. De-select SHOW NAME. Click SCRIPT. In this area, type—go next card—(no quotations or hyphens) where the cursor is blinking. Press ENTER on your keyboard. For the other





directional arrow, type—go previous card—and press ENTER.

- f. Resize button by clicking on a corner of it and dragging it to a shape you want. Click in the middle (With the BUTTON tool selected) to move it where you want.
 - g. Select BROWSE tool.
 - h. Open EDIT menu; select BACKGROUND to return to card layer.
4. Create a Title card.
 - a. Determine how many subject areas you want to present. Use PAINT TEXT to type the subject headings on the title card. Create new, transparent buttons and place one over each subject heading.
 - b. Add graphics as desired.
 5. Add new cards.
 - a. Open EDIT menu; select NEW CARD. Repeat for each new card needed.
 - b. With the PAINT TEXT tool, type one of the subject headings under the stack title.
 6. LINK these new cards to the title card in this manner:
 - a. Go to the title card using the arrow buttons.
 - b. Select the BUTTON tool. Double-click on one of the subject heading buttons. In the dialog box, click on LINK TO. Use the keyboard arrows to get to the desired card, then click on THISCARD in the little dialog window.
 - c. Select the BROWSE tool, and test the button.
 7. Add a field (used to enter text on a card)
 - a. Open the OBJECT menu; select NEW FIELD.
 - b. Double-click on the field that appears on the card.
 - c. Select the field style (I recommend shadow or, for longer passages, scrolling)
 - d. Double-click on the new field again. Click on FONT to choose desired text style; click OK.
 - e. Resize and position the field on the card.
 - f. Select BROWSE tool.
 - g. Type text into field.

Please note that HyperCard automatically saves all changes. If you are using this new stack as a template, open the FILE menu and select MAKE A COPY OF to create student copies.

Happy creating!!!

from the Book Shelf



Picture Thoughts: Critical Thinking Through Visual Arts

by Dorothy G. Hamilton
Hamilton Associates, Starry Night Dist.
26 Appletree Lane, Latham NY 12110; 800/777-0498

Picture Thoughts is an aptly named set of resource materials which uses art prints as a springboard to an exploration of ideas. It is a program for teachers who want lively discussions to develop in their GATE classes. It encourages the students to refine, clarify, defend and evaluate their thinking.

Picture Thoughts was developed by a classroom teacher who perfected it while working with her own elementary students. The set comes with twelve 22" by 28" wonderfully reproduced art prints mounted on heavy cardboard. A wide variety of works and themes include "Bareback Riders" by W.H. Brown, "The Harvesters" by Pieter Bruegel, "American Express Train" by Currier and Ives, and "Iris" by Vincent van Gogh.

What sets these materials apart from other collections of art prints are the teacher's guidebooks, which contain a wide range of suggestions for making a choice, stimulating interest, guiding thoughts, connecting content with cur-

rent curriculum, and producing new thought. Novel ways to interest the student in examining the prints are an especially strong feature.

Also included are a great variety of possible applications in many areas of study, such as science, music, literature, social science, history, economics and reading for each of the twelve prints. The primary value lies in the fact that students are constantly being lead to develop their own critical and creative thinking. As a result, artistic creations become part of every day life, and students have a deeper understanding of how an artist relates his or her work to the world the artist knows and feels.

This is a study of important art work, and is presented in a way that really engages students. They are encouraged to think as they are working through their own evaluations, and they develop an interest in art and artists as well. There is much to recommend in the program. It presents an exciting and effective approach that works especially well with gifted children.

Reviewed by Jean
DiGuilio, GATE Teacher,
Ventura USD.

Wind

Wind that sweeps around the world and above the mountain tops.
Are you the same wind that makes my hair blow?
Wind that blows the owl's feathers and blows the dust away.
Are you the same wind that smashes and trashes everything in your way?
Why do you hurt people when you are on your rage as a tornado?
I feel cold when you blow on my tan face.
Why do you threaten other people's lives when you are so nice to me?

Austin Tarango Age 9
Tierrasanta Elementary School
San Diego, CA

Curriculum Integration at The Mirman School

by Richard Boolootian

Teachers throughout the country are acknowledging the importance of a multidisciplinary curriculum. Implementing such a curriculum helps students acquire concepts and skills of various, targeted disciplines more effectively. This approach requires teachers to recognize connections within their curricula and plan courses or units that allow students to make connections among the disciplines. These connections must be relevant to their daily experiences.

Since natural relationships exist between required subject areas, interdisciplinary unit ideas can be developed from current curricula. Such effective unit design requires common planning time among teachers, flexible scheduling, and early assessment of the yearly curriculum. Teachers find that deliberate planning which integrates two or more disciplines reinforces concepts and skills. Students have come to realize that integrating knowledge is basic to education.

At The Mirman School, integration of subject areas in science has been implemented. Although it may seem overwhelming, incorporating English, mathematics, history, social studies, geography, and art into the science curricula is quite possible. Recently published science texts for elementary, middle and high school students present a multidisciplinary approach. Reading, writing, analysis and math are key skills which are woven into all science activities.

Learning is accelerated as students transfer ideas and skills from one subject to another. An interdisciplinary approach bridges other academic areas to science. The Mirman School science program is structured to provide a superior level of scientific knowledge to students. The curriculum is not designed to produce scientists but rather to enable the students to function effectively in a technological society.

In the Upper School, the science courses include: Integrative Science, Earth Science, Biology, and Chemistry/Physics for first, second, third, and fourth year students, respectively. Integrative Science helps students develop an understanding of how science relates to everyday life. Earth Science presents a study of earth,

its matter, features, processes, and place in the universe. This course provides a balance of study among physical and historical geology, meteorology, oceanography, and astronomy. Academic disciplines such as social studies, art, music, health, math and engineering are successfully integrated into series of activities performed in these first two science courses.

An activity that is very popular with our students is the preparation of molds and casts of selected fossils and specimens. In our biology and social study courses, students study hominid evolution. Students prepare molds of ancient hominid skulls with simple, inexpensive techniques. Plaster casts are then made using the molds. Prior to painting the casts, students learn some aspects of color theory, perception of color, the mixing of colors, and color application to the plaster casts. The resulting skulls match, in quality, commercially purchased specimen. Other fossil specimens are even more exciting.

Biology, the study of life science, is taught with a modular approach. As modules, the units can be presented in any sequence. This allows the teacher to relate current social science topics to the immediate course of study. For example, in previous years, students tied their model on ecological relationships to the Big Green Initiative, Prop. 128. In another example, students were provided a random table of body weights of male and female grizzly and black bears. Students organized and interpreted the data. They determined which bear on average is the heaviest. They also noted differences between the body weight of male and female bears.

Chemistry and Physics are taught in two different semesters. These courses encourage students to develop, practice, and apply a variety of science skills learned in class. These skills enable the students to observe, classify, communicate, measure, predict, infer, hypothesize, experiment, collect and analyze data, draw conclusions and make generalizations.

In all of these courses, students are taught not only scientific facts, but also the skills required to obtain such knowledge. For example,

the factual style of writing in science textbooks is different from the narrative style of most other books. Reading science requires special skills. Students must adjust to the amount of factual information presented. They must learn to read critically and sense relationships among ideas, as well as build on previous knowledge. Students must master a new, technical vocabulary. They must also learn to interpret information provided in tables, graphs, and diagrams. Thus, activities are designed to develop and enhance special skills such as comprehension, vocabulary, analytical and study skills.

The curriculum stresses the literal and interpretive as well as the critical and creative level of comprehension. Students learn the meaning of the material in question. But, more importantly, they learn to formulate original ideas. The development of students' vocabularies also contributes to their comprehension of science concepts. Students must be able to use the language of science in speaking and writing in order to communicate effectively. In the vocabulary activities, students learn about the structure and function of words. For example, when students survey the animal and plant kingdoms, learning definitions of words (phyla, class, order) is a formidable task. Yet through word structure, meaning, and usage, students are quick to effectively communicate both orally and in writing. They develop an understanding of the relationships among words.

To analyze data accurately, students learn to logically evaluate a problem to determine the known and unknown variables. The activities require the students to measure, develop and

interpret graphs, and manipulate data using mathematical relationships. For example, data dealing with air quality found in The Weather section of the Los Angeles Times can be plotted, graphed, or analyzed through pie charts. The analytical activities require integrated use of scientific, verbal and math skills. They are designed to encourage students to use symbolic language and thought processes.

Study skills are also necessary in order for students to learn and master assignments. The students are taught to accurately read and follow directions. They learn how to gather information from various sources. These skills are important in directing their own study efforts. Thus, self-directed study, such as reports, group presentations, science fair projects, and laboratory investigations are commonly assigned in the courses.

Science provides a progressively greater understanding of the natural world. It is closely related to technology, a means by which society develops and advances. Technology uses accumulated human knowledge from science and other fields. Teaching with a science, technology and society approach is interdisciplinary, with strong connections to history and social science, mathematics, literature, and the arts. Science can provide an outlet for creativity, aesthetics, and enjoyment which appeals to each student. Such interests should be nurtured as part of the comprehensive science curriculum.

Richard Boolootian is Science Department Chair at The Mirman School in Los Angeles.

*Student Poems
from
The Mirman School,
Los Angeles*

The Unknown

The universe
Is small
Compared
To the void
Beyond,
The endless
Darkness,
The terrible
Abyss,
The ebony
Cloud,
Beyond.

Brian Kendig, age 9

Space

The planets are gems
Scattered through the galaxy.
Solar flares
Gargantuan balls
Of churning gasses
Hurling themselves through
The atmosphere.
A mystery for the universe to unwind
Bit by bit
Bit
by
bit.

Kristen Bruhn, age 9

The Fight

The ebony night stares at the moon
Like a cat stalking its prey,
Its eyes dancing with cunning.
But the moon resists this dreadful
force.
The moon will never give in.
It wishes to keep the darkness
illuminated.
But the murky night keeps on trying
To dim the light,
So it can overrule.

Lauren Weinberg, age 9

youthful charges? What is the cause of this middle school madness?

Blame the Students

Some middle school teachers seem to place the blame on the students. Because of rapid physical and emotional changes experienced in adolescence, there is little reason to expect these students will focus their attention on learning. Their glands are beginning to develop and the onset of puberty is near. This is the time for them to "smell the flowers" and discover who they are. Some experts believe young people at this age should enjoy the last of their childhood and not be pressured by demanding school work.

Studies in the late seventies gave further justification for the non-academic nature of the middle school. Neurological studies showed that our brains develop (by growing more brain cells) from birth through adolescence. However, the growth is not an even process. Each brain grows in spurts of activity followed by periods of rest. A chart of these growth spurts and fallow periods provides some insight to why the middle school years are often "written off" for any serious academic study.

Brain Growth Model (from Chall and Minsky '78)

Spurts of Growth

- 3-10 Months
- 2-4 years
- 6-8 years
- 10-12 (or 13) (earlier for girls)
- 14-16 (or 17) (earlier for boys)

Periods of no growth (fallow)

- 4-6 years (Kindergarten)
- 8-10 years
- 12-14 years (Middle School)

Periods of zero brain growth occur during the school years of kindergarten (ages 4-6 years) and the middle school (ages 12-14 years). Curriculum experts generally agree that during these periods, children should be provided with "developmentally appropriate" learning experiences. But to some that means no "schooling." They seem to forget that after the adolescent years, the mature brain does not add more cells, but learning continues to occur.

Gifted children experience glandular awakenings and brain growth spurts that other students experience. But not all children respond

with the same intensity or the same disorientation at the same age. The designers of the modern middle school assume that each individual will have all the characteristics of the group. They overlook the diversity of individual differences and needs that these students represent.

Blame the Curriculum

The middle school curriculum also mitigates against the gifted and talented child. What is taught in the middle school grades depends on what has been previously learned. And the middle school serves as a transition between elementary school play and high school work.

Curriculum at the elementary school level is based on a spiral approach. When a content area is introduced at one grade level, student mastery is not required. The curriculum planners and textbook writers assure that each major topic will be revisited in an enriched form at later grade levels. If elementary teachers attend to the individual differences of their pupils, the students who demonstrate quick mastery will be encouraged to go beyond the "grade level" content. However, when topics are revisited in later years, especially during middle school, the gifted students in regular classrooms may indeed have "already done that."

Too often the middle school curriculum is a tedious review for gifted and talented students. Researchers have demonstrated that students at the beginning of the school year generally know a third to a half of the textbook content to be taught that year. Many gifted and talented children already have mastered what they will be asked to study during the next nine months of school. While they can easily demonstrate their mastery of this content, the school system requires them to adhere to the slow pace of the whole class, which often results in a repressive learning environment.

Blame the Learning Environment

Gangs, drugs and threats of physical violence have made some middle schools hazardous to all students. But recent trends in teaching create a learning environment that is hostile for gifted and talented students in an otherwise peaceful middle school. One major trend in education is the imposition of cooperative learning approaches for heterogeneous groups composed of students with the widest range of abilities and interests. Teachers are told that through these approaches, all students will show maximum achievement while developing de-

sirable social skills and attitudes. Slower learners are given meaningful roles in the learning team while the gifted students serve as their tutors. Teachers and parents are not told about the research which documents the potentially harmful impact these strategies can have on gifted and talented children.

Recent publications from the National Research Center on the Gifted and Talented have documented that such approaches can restrict the learning of the most able students, causing them to stifle their own quest for learning in order to conform to the less rigorous standards of the group. Their assignment as unpaid and involuntary tutors can increase their sense of social isolation by making them appear different at a time in their lives when being different is devastating. These sensitive young adolescents are singled out as commodities to be used, while being denied their right to instruction appropriate to their level.

Some gifted and talented students cope by opting out of learning. They hide their abilities as a form of self-defense. Other coping strategies of gifted and talented students can undermine the teacher's purposes while appearing to make the heterogeneous-cooperative learning classroom work. When given group assignments, many GATE students resort to doing the work for the group and allowing them to share in the credit. It is easier than fighting for reason and justice. Through this coping strategy, nobody learns, but the assigned tasks are done well.

Impact

There are many horror stories about middle school students who are put "at risk" by an uncaring system that ignores their needs. Such a system can have a negative and lasting impact. Gifted and talented students learn lessons that are the unintended outcomes of neglect. Their once positive attitudes about learning and school become negative. School becomes equated with unpleasant repetition and peer rejection. Their self-esteem may be severely damaged. They begin to discount their own self-worth because everyone else does. They lose confidence in their abilities, and their performance in school takes a nose dive. Parents panic at the prospect of their young scholars becoming potential drop-outs.

Common sense and substantial research confirms that the situation described above does not have to exist. Gifted and talented middle school students thrive in an environment where achievement is the norm and excellence is ap-

preciated. They can find academic learning to be interesting and challenging in a supportive atmosphere where the development of individual abilities is seen as the purpose of education.

There are some outstanding middle schools in California, schools that are justifiably proud of their success with all students, including the gifted and talented. These schools provide differentiated instruction and special program opportunities so that their most able students are challenged to achieve in a supportive peer environment. School leaders are bravely withstanding the pressures to climb on the bandwagon and restructure around the trends of heterogeneous grouping and cooperating learning. School personnel who continue to provide excellent programs for gifted and talented students need the support of their colleagues and their community. They need to know that they are not alone. There are others who are also holding the line for excellence.

The ATS Experience

An example of a program showing the capabilities of middle school students in an appropriate environment is the Academic Talent Search (ATS) at California State University, Sacramento. This is a summer program designed to develop the academic talents of middle school students. Tests are used to assist in the process of selecting a field of study that is interesting and challenging to the students. Enriched classes such as forensic science, problem solving, and the history of the middle ages offer students opportunities to explore subjects they don't have at their regular school. Accelerated classes such as Algebra I and II, first and second year Spanish, and computer programming, provide access to subjects typically reserved for older students. Study skills and keyboarding (typing) classes provide the rapid acquisition of skills vital to success in an academic environment. Instruction in all classes is challenging and fast-paced, not watered down to the age of the participants. Instructors are university professors and high school teachers who know their content and know how to teach it.

Achievement levels in ATS have been remarkable. In six weeks of study, mathematics students have demonstrated mastery of content that usually takes nine months or more to learn in a traditional school. Foreign language learning for many students is equally impressive. Learning a "year's worth" of French, Spanish, or Latin in six weeks is common. Writing stu-

dents have shown proficiency that equates to the level of first-year college students. While it is more difficult to document objectively, students in the enrichment classes have demonstrated extraordinary achievement, according to their instructor's assessment.

One might expect that high levels of achievement in such a short time can result only from a hothouse environment in which all else is forsaken except study. A survey of students at the end of the summer revealed a more positive pattern. Students achieved more than they thought possible and still had time for other activities. Students who attended classes in mathematics, writing, foreign language and other courses rated their homework and their effort.

RATE YOUR EFFORT

	Math	Writing	Foreign Lang.	All Courses
100 Percent	31%	45%	45%	49%
75 Percent	54%	40%	42%	40%
50 Percent	12%	15%	8%	9%
25 Percent	3%	0%	2%	1%
0 Percent	0%	0%	2%	1%

HOMEWORK HOURS

	Math	Writing	Foreign Lang.	All Courses
10 + per week	9%	17%	12%	7%
7-10 per week	23%	36%	20%	14%
4-6 per week	41%	26%	33%	22%
1-3 per week	19%	18%	27%	30%
Less than 1	9%	2%	7%	26%

The majority (89%) of students in all classes rated their effort at 75% or higher while they devoted an average of three to four hours of homework per week. It was interesting to note that math and writing students felt their level of effort was slightly less than the average for all other classes, yet their average homework time was slightly higher (between six and eight hours per week).

When asked about the level of difficulty of homework, students reported it was "just right." About a third of the math and writing students

HOMEWORK WAS...

	Math	Writing	Foreign Lang.	All Courses
Too Much (Hard)	31%	36%	19%	24%
Just Right	61%	63%	75%	67%
Too Little (Easy)	8%	1%	6%	9%

thought the homework was too much or too hard. Only a quarter (24%) of the students in all classes felt their homework was too much or too hard. A few students thought the homework was too easy and wanted more.

But academic achievement is not always the most important outcome of ATS. How the students felt about the experience and its impact on them is more important than what they studied. Student evaluations at the end of their classes indicated they felt a new empowerment, they gained a sense of personal strength because they succeeded at a challenging task through their own efforts. They discovered that learning can be fun and it is OK to be smart in an environment where the norm is excellence not mediocrity.

Parent Survey

After last summer's program ended, questionnaires were sent to parents to determine changes they could see in their students. Parents were asked why their student applied to ATS and how they benefitted from the experience. Their responses are summarized below.

What was the primary reason your student applied to ATS?

Academic Acceleration	72%
To give him/her something to do	13%
To earn high school credit	6%
To overcome deficiencies	6%
Other Reasons	3%

When asked what was the most important outcome, parents gave a wider range of responses.

What needs have been met by ATS?

Academic	33%
Self-reliance	27%
Self-esteem	24%
Social-Emotional	15%
Other	1%

ATS is conducting an extensive research project to follow its former students through high school and college. The purpose is to assess, among other things, what impact ATS can have on middle school students over the long term. The preliminary results are most impressive. Former students report that their experiences in ATS have had strong, long-lasting, positive benefits. They report growth in self-confidence and independence from experience.

ing success in academic pursuits. They report that long after the new knowledge has faded from immediate recall, they still remember fondly the summer they worked so hard and achieved so much.

Conclusion

Adolescents, especially gifted and talented ones, need to engage in activities that are challenging and meaningful, but many middle schools are insensitive and unresponsive to these needs. The blame may lie with the students who are entering puberty and are experiencing dramatic gland development when their brain growth is in a fallow period. However, not all children experience these problems at the same time. Individual variability exists in gifted adolescents, too. The curriculum at the middle school is primarily a review of content which many gifted and talented students have already mastered. The current educational trend of heterogeneous grouping and cooperative learning may be stifling the most able learners. Gifted and talented students often develop coping strategies which depress their performance, or

they may undermine the system by doing everyone's work. In consequence, the middle school may be hazardous to the academic, social and emotional well-being of its most able students. While some middle schools are doing an outstanding job with their gifted and talented students, they feel heavy pressures to change. The ATS program at CSUS is an example of a program that is holding the line for excellence. ATS has demonstrated positive benefits for this age group through academic challenge in a supportive atmosphere. Students and parents have reported positive impact in academic achievement, self reliance, and self esteem. Preliminary findings of a long-range follow up study are very encouraging for highly motivated and academically talented adolescents.

Dr. Terry Thomas is a Professor in the School of Education at California State University, Sacramento. He serves as Project Director and Principal Investigator of the Academic Talent Search (ATS) and the Accelerated College Entrance (ACE) programs at that campus. His phone number is 916/278-7032.

Gosfield

Continued from page 1

of six main components:

- Classroom training
- 6th grade: Problem Solving – Foster Park
- 7th grade: Decision Making/Group Dynamics
- Individual community service
- Volunteer Day
- Leadership Conference – Westmont College

There are two types of classroom training. The first is informal, and is an enhancement of a process that arises in classrooms in general. Whenever group projects are assigned or class presentations prepared, leadership is assumed through the various tasks students carry out in relation to the project or activity. In this aspect of our GATE program, the nature and process of leadership are advanced by identifying and providing tools for organization and effective completion of the particular assignment.

A second type of classroom training is more specific. Instructional strategies are carefully designed to develop an understanding of leadership, together with the traits and skills needed to become effective leaders. When students generate their own definitions, skill and trait lists, not only are they more aware of the concepts, but they also achieve a greater sense of personal involvement in the actualization of

these traits. Our teachers use a variety of means to accomplish this, including brain-storming and discussion, group experiences, individual writing and artistic creations. One teacher has patterned his GATE classes after the U.S. Senate, with students acting as majority and minority leaders on a rotating basis. These activities are integrated with academic training throughout the year within individual classrooms.

The other five components of our program are more formalized and are generally district-wide activities, involving all of our middle school GATE classes. The first such activity occurs each fall, when 6th graders take part in "Foster Park Day". This is designed to introduce the youngest middle school students to the leadership training program.

In this project, one or two 6th-grade classes at a time are bused to a county park located at the edge of the city for a day-long series of problem solving activities. Students work in both large and small groups on a variety of tasks. For example, the students are required to create a large scale map (10' x 10') of the park, drawn to scale as accurately as possible, without teacher direction. This assignment, however, is only a device for bringing out two really

important problems that are inherent in every cooperative activity: the need for organization and for effective communication. After an initial period of haphazard collecting of information and mistakes made in transferring the information to the map, the students are soon compelled to recognize the need for effective organization and communication, and to take steps to make them occur.

This 6th grade Foster Park Day has been so successful that we are now developing a similar special activity for 7th graders to occur in February or March of each year. The teachers have chosen to focus the 7th grade project on Decision Making and/or Group Dynamics, with activities selected to provide practice and improvement in those areas. As in the 6th grade activity, students will go off-campus for the day-long event.

Another component of our program is the community service required of all students in GATE social science classes. Many high schools across the nation are beginning to require community service for graduation. Here too, we think that students can gain from this experience much earlier than at the high school level.

In this program, each student is required to perform a specified number of hours of community service as part of the social science class homework. Examples include: doing yardwork or clean-up projects for elderly neighbors, churches or community parks; assisting with youth athletics; volunteering for social service agencies; tutoring and other school related volunteer work. All of this must be unpaid work. A contract is signed by student, parent and teacher, and completion of the work is verified by the parent before credit is granted. An alternative, to research the lives of people who have made significant contributions to the welfare of others, is offered to those who choose not to participate in the community service, however, students rarely make the research choice when they see the personal satisfaction and excitement which comes from active community service work.

This year we are asking students to write about their community service experiences, and plan to include selections from these writings in the District Middle School GATE literary work published each June. We believe that the training students receive in their community service participation is a meaningful contribution to the development of responsible leadership.

As an extension of individual contribution to the community, we are currently making plans for our second district-wide GATE Volunteer Day. One student is selected from each middle school GATE class throughout the district to serve as a member of the planning committee. One teacher advisor from each school also serves. The planning committee members solicit input

...we estimated that our students contributed more than \$4,000 worth of services to the community.

from their classes and then determine the activities, guidelines, publicity, and the logistics required in bringing more than 350 students together on a single day to participate in a variety of volunteer activities around the city.

Last year's activities included planting trees and shrubs at five elementary school sites, visiting and sharing time with older people at two homes for the elderly; performing a beach clean-up, creating a large-size map of the U.S. at one elementary school site, and reading to primary students at two elementary school sites. Using minimum wage guidelines, we estimated that our students contributed more than \$4,000 worth of services to the community.

The response from all who participated — students, parents, teachers, principals and other adults — was tremendously positive. It was an extraordinary learning experience for all involved, and was so successful that a similar activity is being planned for this year.

Finally, our district participates in a regional leadership conference for gifted 7th and 8th graders, sponsored by the Pacific Region of the California Association for the Gifted and held at Westmont College, located about 25 miles from Ventura. Some 150 students and adult facilitators come from the counties of Ventura, Santa Barbara and San Luis Obispo to spend two and a half days in leadership training activities. The participants then return to their own schools to implement the training they gained at the conference.

As a CAG Demonstration Site, we in Ventura are currently creating a video tape highlighting the various components of our program, and compiling a teacher leadership handbook which we hope to share with others.

References

- Ellis, J. (1990). Leadership Strengths Indicator (inventory with manual). Trillium Press.
- Feldhusen, J., & Kennedy, D. (1988). Preparing Gifted Youth for Leadership Roles in a Rapidly Changing Society. *Roeper Review*, 10(4), 226-230.
- The Gifted Child Today (1988). GCT Inc. November/December. (A special issue on leadership.)
- Hermanson, D. (1986). Issues in Gifted Education: A Collection of Readings, 247-266, Gifted and Talented Education Program, San Diego City Schools.
- Karnes, F. & Chauvin, J. Leadership Skills Inventory. ProEd.
- Renzulli, J., et al. (1987). Scales For Rating Behavioral Characteristics of Superior Students. Creative Learning Press.
- Roets, L.F. (1986). Leadership: A Skills Training Program. New Sharon IA: Leadership Publishers.
- Sisk, D. & Rosselli, H. (1987). Leadership: A Special Kind of Giftedness. NY: Trillium Press.

Margaret Gosfield is the GATE Coordinator for the Ventura Unified School District. Her phone number is 805/648-5391.

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COMMUNICATOR

PARENTING THE GIFTED

Parenting the Middle School Gifted Child

by Sharon Freitas

When we think of the middle school student, what comes to mind? What goals do we have for them? What are some of their problems and needs? What are some of the things that cause problems between the parent and the child during this very crucial time?

I've found that adolescence may be hard on the parent, but it's even harder on the adolescent. We need to remember that here is a student who really is striving to be independent, and that probably most of the problems arise from that.

The students are experimenting, they're testing, they're trying to define their relationships both within the family and with their peers. They're really torn between being a child in the family and being an independent person on their own. They're coming to the point where they're narrowing and deepening their interests, exploring career goals, and developing specific and sometimes intense interests.

They say they want to take five periods of music and you say, "Now, I really think you ought to think about science and math." They're wondering who they are, what they believe, where they belong. They're going through, of course, their biological maturation, they have very uncertain ideas of what adults and peers expect of them, and they have lost the intimacy that they had with their parents in elementary school. It begins when they say, "Mom, I really don't want you to come to 6th grade anymore or come by my classroom. Do you have to be room mother again?" And if you dare set foot in

In Search of the Owner's Manual

by Terrie Gray

Which parent hasn't wished that each child emerged from the womb clutching an owner's manual! If only we had the perfect guidelines tailored to the idiosyncratic needs of the child. Since the evolutionary process hasn't carried us to this level, we parents must rely on advice from friends, relatives, educators, talk shows and authors. Our task becomes one of sorting through the myriad child-rearing formulas to find the pattern most agreeable to us and our child. The rest of this article documents my search and describes what I feel to be a suitable formula for working with gifted children.

I do not begin at the beginning, but somewhere in the middle, certainly after the child has already demonstrated precocity, or has been identified gifted. I will call this the "Well, now what?" stage. Conventional wisdom would have it that parents of the gifted have it easy; they can almost do nothing and be assured of a successful outcome. So much for conventional wisdom. In his studies of prodigies, Dr. David Feldman asserts, "The more powerful and specific the gift, the more the need for active, sustained, specific intervention from those who are responsible for the child's development." (*Nature's Gambit*, p. 123)

Dr. Feldman describes a woman he met at a party, who, upon learning of his field of study, told him of her childhood. She was born to profoundly religious parents who tolerated her interest in the piano only when it seemed a casual thing. Once her interest grew, they prevented her from practicing; in fact, they shut her



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EDITOR'S COLUMN



Jean Drum

A Little Respect, if You Don't Mind

This issue is filled with articles by adults who are telling other adults how to be good parents to gifted children. These adults are articulate, concerned, educated and filled with good intentions. But when everything is taken into consideration, they are still adults who are deciding from the heights of years and experience (and perhaps a bit of world weariness) what gifted children need to find in their parents. Just to add a different perspective, let's find out what some gifted kids themselves said they would want if they could choose the perfect parents.

These are elementary school kids, and of course they had some of the usual concerns of children—not have to go to bed so early and not let my little brother mess up my stuff—but they also had some very interesting things to say about themselves as GATE students. First, they wanted to be “treated like regular kids” and they didn’t want anyone to “make a big deal about being in GATE.” At the same time they appreciated the fact that their parents considered school important and both insisted that they do their homework and were willing to help them with it (“but mostly they let me do it myself.”) They wanted to be taken to the library often and allowed to get as many books as they wanted. They wanted rules, and they didn’t mind parents being strict as long as they were fair. But overwhelmingly they wanted to be taken seriously. They wanted their parents to listen to their ideas even though they didn’t expect parents to let them run the family. They wanted parents to give them credit for knowing things and they wanted to be trusted (though they freely admitted that trust must be earned.) They wanted their parents to listen to them and treat them like “real people.” They said it would make them feel good if their parents occasionally asked them for advice. They want to be respected.

Much of the advice given by the adults in this issue touches in one way or another on this question of respect, so it seems that our experts and our children are actually on the same wave length. Earning respect and getting it is a pretty good idea for everyone. And parents, take heart. The children in this survey were almost as one voice in saying that they thought their parents were great. They said they were fair, did fun things with them, comforted them and listened to them, and they want their parents to stay just the way they are.

PUBLISHED BY THE CALIFORNIA ASSOCIATION FOR THE GIFTED

Administrative Assistant, Sharon Mountford
818/888-8846...FAX 818/888-6225

The CAG *Communicator* is published five times during the year, in September, November, January, April, and June. Opinions expressed by individual authors do not necessarily represent official positions of the Association. Subscriptions are available to non-members at an annual cost of \$15.00.

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CAG encourages all interested parties to submit articles for publication. All submissions will be given careful consideration. Photos and camera-ready art work are particularly desirable. Student work should be accompanied by teacher's name and school. Send all material with your name, address, and phone number to Jean Drum, *Communicator* Editor, 7822 Belgrave Avenue, Garden Grove, CA 92641. You may phone Ms. Drum at 714/892-1745.

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CALENDAR

June 28-July 1 and August 2-5, 1993
National Women's History Project
A Woman's Place is ... in the Curriculum

Training session for educators, with credit available.

Rohnert Park, \$350 per session.

For information call 707/838-6000

July 19-30, 1993

Confratute '93, Summer program on enrichment learning

University of Connecticut, Storrs, Connecticut

For information call 203/486-4905

July 29-31, 1993

Supporting Emotional Needs of Gifted (SENG) Conference
Parents and Professionals as Partners

Knickerbocker Hotel, Chicago, Illinois

For information call 513/873-4300

August 2-6, 1993

Rimm Underachievement Institute
How to Help Bright Underachieving Children

Milwaukee Marriott, Brookfield, Wisconsin

For information call 800/475-1118

August 8-12, 1993

10th World Congress on Gifted and Talented Education
A Gifted Globe

Royal York Hotel, Toronto, Canada

For information call 416/978-2400

November 3-7, 1993

40th Annual Convention of the National Association for Gifted Children

Atlanta, GA

For information call 202/785-4268

March 4-6, 1994

32nd Annual CAG Conference
Oasis for Cultural Diversity
 Palm Springs Convention Center and Wyndham Hotel

For information call 818/888-8846

NEWS BRIEFS

Youth Summit

In conjunction with the World Congress on Gifted Education in Toronto in August, a Youth Summit will be convened. Two hundred young people from around the world are expected to attend. Daily sessions with facilitators will provide opportunities for sharing thoughts, feelings and writings, individually and in small groups.

The theme, "Gifted Youth Think About Education Worldwide," will give the delegates a focus for their discussions. They will also attend lectures and workshops by people such as actor and Ambassador at Large for UNICEF, Sir Peter Ustinov; Nobel Prize winning chemist, John Polanyi; and Secretary General of the Rio Earth Summit, Maurice Strong.

Students must be between 15 and 19. Housing will be on the campus of the University of Toronto. Registration fee is C\$525 which includes five nights lodging, two meals per day, five-day bus transit pass, ticket to a Blue Jays baseball game, all sessions and social activities from Sunday afternoon, August 8 to Friday morning, August 13.

If you are interested in representing California, contact Dr. Barbara Clark at 818/716-6762.

Dr. Norman Mirman to be Honored

The West Coast Father's Day Council has selected Norman Mirman, Co-Founder and Director of the Mirman School as one of the fathers to be honored in this year's event at the Bonaventure Hotel in Los Angeles on June 8. With his personal and professional partner, Beverly Marmour Mirman, he raised daughter Leslie and son Alan. They are the proud grandparents of five and still at the helm of the Mirman School which they established to meet the needs of gifted students in 1963.

CAG congratulates Dr. Mirman!

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Sandra Kaplan

From Both Sides Now

by Sandy Kaplan, President
and Bette Gould, parent of gifted children

I am pleased to share this space with a colleague who taught with me many years ago, and who has shared the growing up of her gifted children with me. Following are excerpts from a recent discussion we had regarding parenting the gifted.

Lack of Challenge

Parent: One of my biggest concerns is whether the schools consistently are providing challenging situations for my children. While on the one hand I want to support the need for more challenging experiences for gifted children, I feel ambivalent about asking a teacher to provide one more thing when I consider the huge task of educating all children in the class. Nonetheless, I am my children's advocate and must find a way to articulate my concerns.

Educator: Schools are not always clear in being able to describe to parents exactly what challenges they are providing. Sometimes this is due to a lack of consistent and cohesive philosophy for a gifted program; other times it is a failure to communicate the elements of a challenging program that is in existence. Often, end products are shared with parents, but the means for achieving those products are not described and, therefore, the challenging process that the child experienced while developing the product remains unclear.

Parent: What is the best way for me to question a teacher about available challenges for gifted children? I'd like to do it in a way that encourages a partnership and not in a way that would offend or put off the teacher.

Educator: One good way is for a parent to state some of her own observations of her child, and to invite the teacher's perceptions related to her observations. This provides a way by which the teacher and parent can communicate about the child without intimidation. There are general topics or areas that both parents and teachers should agree are the common ground for discussion. Some of these are: "What progress do you see?" "What areas or activities in the classroom truly engage or stimulate the child?"

"How can the school and the home build a partnership to enhance the child's exposure to challenging experiences?"

Parental Responsibility

Parent: I'm always concerned that I'm not doing enough to enhance my child's ability. And, then sometimes, I'm concerned that I'm overly involved with what's going on in my child's education. How do I walk this tight-rope?

Educator: There is no clear-cut answer to that question. But there are some benchmarks that we can use to address the issue. One is that we need to pay more attention to the signals that children give us in the dialogs that we have with them, in the activities they adopt for leisure time, and to their attitudes about themselves as learners. Parents need to remember that the answer to the question is found in the understanding of their individual child as well as in the ability to understand their own needs versus the needs they feel for their child.

Differences Among the Gifted

Parent: Why are my two gifted children so different from each other? One of my children is very self-motivated and has a desire to be accomplished in every endeavor, but creates some stress for herself. The other one is disorganized, has only some self-motivation, and generally takes the easy route to most goals—but he's very happy.

Educator: Perhaps one of the most startling observations in looking at a group of gifted students is to recognize that there is as much heterogeneity in this group as there is diversity among any group of children. The standard concept that every child must be looked at as a unique individual rather than be compared to others is true for the gifted. The contemporary concept that giftedness is represented by multiple and varied areas of expertise and ability must be applied within families as well as within schools.

How to Build Achievers

by Laura Hathaway

Gifted underachievers present a complex challenge to their teachers, as well as their parents. How sad to see a student with great potential, even tremendous verbal or mathematical ability, who is unable to follow through on assignments or to perform up to expectations.

I wrestled with this problem during many years of working with gifted youngsters and their families until I came across the work of Dr. Sylvia Rimm, who was able to put the issue into perspective for me. I have found her viewpoint extremely helpful in coping with underachievers and helping them to be more successful.

Dr. Rimm sees underachievement starting from a home situation in which the child plays a *dependent* or *dominant* role. The *dependent* child is overprotected and immature, one who seeks constant approval and guidance. He/she actually can appear stressed or anxious from too much parental pressure, when in reality the stress results from inability to handle effort. The *dominant* child is one who has too much attention from his/her parents, one who has become the center of power in the family. This child has been encouraged to challenge authority and has never received clear messages regarding limits or appropriate behavior.

Achievers are people who have learned persistence, how to be problem-solvers, how to survive winning and losing, and how to put forth effort towards a goal. Underachievers, on the other hand, have a hard time with the discipline and effort necessary to be successful. They are poor risk-takers who tend to seek constant attention and blame others for lack of success.

School can also affect underachievement. If the structure of the classroom is too loose or too rigid, underachievers will tend to challenge the system. They perform better when expectations are clear, but there is some

flexibility for differences. Competition can also affect their performance, since they have a difficult time comparing themselves to others. If they are able to compete against their own performance, they can often be more successful.

Interestingly enough, those children who are dependent and seem to be suffering under the burden of parental pressure often do better when they are given less sympathetic support from the teacher, rather than more. Since they seek constant attention, it is helpful to encourage them to try to work on their own and seek help less often. They need to develop more independent working skills and experience the satisfaction of solving problems on their own.

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We know that teacher expectations can affect students' performance as well. That is especially true in the case of underachievers. Constant correction or reprimands in front of other children can have a very negative effect.

We also know that the word "bored" can have many meanings. This is a word that is often used by dominant children and their parents to suggest that schoolwork is too easy or inappropriate, when in reality the work may involve too much effort. We need to help parents understand that building academic skills is similar to honing physical or musical skills. No one would want to suggest that a budding figure skater stop practicing "school

figures," or the star basketball player stop practicing, even though they also need an outlet for their special talents. In the same way, even very gifted children need to learn the basic skills that are the foundation to future learning at higher levels.

Standards of acceptable work and behavior are also important. No matter how creative a story is, it is still important that words and grammar are used correctly. No matter how valuable, intelligent and interesting a student's contribution is, people on the receiving end of the contribution still appreciate being treated with courtesy and respect.

It would take much more than the space we have available to describe the ways we need to work with gifted underachievers to promote achievement. In fact, I strongly suggest that you read Dr. Rimm's books *Underachievement Syndrome: Causes and Cures* and *How to Parent So Children Will Learn*. These are available through Educational Assessment Service, Inc., W6050 Apple Road, Watertown, WI 53094.

The major point, however, is clear. We as parents and teachers need to help our youngsters understand the value of effort in academic success, and that to be achievers, students must be willing to work hard, to sometimes struggle and persevere and to problem-solve and hone their talents. Just as in sports or the arts, creativity or talent without discipline is not productive.

Without parent involvement and support on this issue we have little chance of success, especially with older students. If we as educators can work together with parents to develop these work habits and attitudes, then I believe we have a good chance of turning underachievement around.

Laura Hathaway is the Director of the Pegasus School, 19692 Lexington Avenue, Huntington Beach, CA 92646.

An Adolescent Already! Understanding and Meeting the Needs of Your Developing Gifted Child

by Richard Swart

Raising a child in today's Post-Modern society is a challenge for any parent. Raising a psychologically well adjusted and achieving teenager almost seems to require a Ph.D. in child psychology, if you listen to the avalanche of articles on parenting and child development. Unfortunately, the effect of this mass of information is often to leave parents of gifted children more confused. Gifted kids just don't fit into the neat descriptions offered in most "how-to" parenting manuals.

Few parents or teachers have adequate information regarding the very unusual developmental course taken by gifted kids. Many are tricked into thinking that giftedness means accelerated development. Not true! Gifted children develop in *qualitatively* different ways compared with their age mates. One specific difference is in the meaning of adolescence. Gifted children can be adolescent long before their bodies develop sexually. This article will review the development of gifted children and describe how these developmental differences often account for school problems, difficulties in family relationships and emotional problems. Ideas and suggestions for parenting and communication strategies will also be reviewed.

The Early Years

While the professional literature continues to debate whether giftedness is a genetic variable or is created in the cauldron of family and school interactions, any group of gifted parents will agree that they knew something was "different" or "unusual" about their children in infancy or preschool. The parents aren't the only ones. Research with young gifted children shows that they are aware of a difference between themselves and other children at between two and two-and-a-half years. These differences often become evident as the child's facility with language far surpasses her peers. Gifted children also are known for their extremely inquisitive minds. They learn for learning's sake and never appear satisfied. The nature of their questions, as well as the intensity of their thought processes, often differentiate gifted children from their peers in pre-school.

A common myth affecting many parents is that gifted children should not be told they are gifted because it will harm them psychologically. This is based on a belief that being gifted will put the child under too much pressure or will cause him to become arrogant or egotistical. The number one complaint of gifted children found by Judy Galbraith in her research for *The Gifted Kids Survival Guide* was that "no one explains what being gifted is all about; it is kept a big secret."

A fundamental task of parenting is to provide a context for the child to understand herself and develop an appreciation of her abilities and talents. Until age eight children don't have a clearly defined sense of self separate from that of their families. Until age seven or eight most children can't really understand objective feedback about their abilities: report cards, scores and IQ numbers are understood only in connection with the parents' reactions and the child's meaning system about what "good boys" or "good girls" are supposed to do. Adult discomfort with the term "gifted" often prevents parents from providing their children with an opportunity to talk about being gifted. Many times this lack of communication is also a result of parents' denial of, or discomfort with, their own giftedness. This is especially true of mothers who are bound by cultural expectations that preclude self acceptance as a gifted individual in order to be accepted as feminine.

Being gifted is not something that occurs three hours a week in the GATE class. Being gifted affects a person's entire psychological, emotional, sexual, and intellectual development from the moment of birth onward. Not talking about how a person experiences the world is tantamount to rejecting that person's experience in life. Parents need to talk with their family about giftedness, what it is going to mean to the family, and how they wish family members to interact with the gifted child. Discussing giftedness as a type of talent often decreases sibling conflict when everyone's talents in the family are noticed and given time. Ensuring that the extended family gives your

Richard Swart, MSW, is
the Gifted and Talented
Specialist at Spectrum
Comprehensive
Mental Health Care
Medical Group.
His address is
2147 Mowry Avenue,
Suite D-1, Fremont, CA
94538

gifted child attention and nurturance for personality not performance helps to prevent the development of perfectionism. Many gifted children are put on display by their families. This quickly leads to young gifted children becoming attention addicts and sets the stage for identity crises later in development. A fundamental task of adolescence is the development of a sense of self that is uniquely valued outside of a parent's expectations.

Developmental Differences

A brief review of some of the developmental differences in gifted children will help to set the stage for understanding their challenges in adolescence.

Intensity of Emotions and Reactions. Gifted children experience the world deeply. They become engaged with people, play, ideas and fantasies in ways that are often unappreciated by others. We are all aware of the emotional conflict that many great performers and artists endure. What most don't understand is that the same intensity, passion and volatility can accompany any project that is engaging. The difference is that in the arts there is a culture that supports self-expression and which allows for the development of intimate and revealing relationships. Young children and gifted children whose passions do not get supported in organized ways often feel disturbed or strange because others don't understand their emotional attachments. Additionally, gifted children react more strongly to almost all stimuli. Mood swings, silliness, absorption in computers or Nintendo, extremely fussy eating and intense grief reactions to small losses are all examples of this intensity. This often is mistakenly diagnosed as Attention Deficit Hyperactivity Disorder. Gifted children and adults need assistance in learning to express their feelings and find a supportive community that allows this difference.

Parents are often tricked by their children's extensive vocabularies or arguing capacity into believing that the child possesses advanced emotional development. Gifted children are children first and need to be parented at their level of emotional development, not at the level of their vocabulary. Time-outs, hugs, cookies and playing in the park are oftentimes necessary interventions before problem solving can begin. Gifted children who do not yet know how to express their feeling may come to you with a "101 reasons why I hate my teacher" lecture since they don't know how to say, "I had

a bad day at school. I'm embarrassed and hurt because I got a bad grade." Children will use their strongest skills under stress. This often means that gifted children use their analytic thinking skills and language skills to try to cope with emotions that they don't understand and which are often years ahead of their chronological development.

Supersensitivity and Extraperceptiveness. Gifted children's ability to acquire information is sometimes more of a problem than a benefit when it comes to non-academic issues. Some parents believe that gifted children have bat-like hearing because of their ability to know everything that is being talked about at home or at school. These children are able to acquire masses of information. This information is often years ahead of their readiness to deal with it physically or emotionally. These kids become aware of major problems facing the world and feel powerless to deal with them. These children often initiate learning about subjects that we would prefer they not yet know about. If we limit their ability to ask questions about difficult issues, they do not stop questioning, they stop communicating. This struggle to reconcile the world of childhood to the reality of the world as it truly is (and we adults may be afraid to admit how bad it can be) can lead to an existential crisis in a young child.

Questioning of values, questioning of tradition, and cynicism and contempt for adult institutions is often blamed on peer pressure and hormones. However, these behaviors are indicative of young people trying to make as much sense of their existence in the world as their life experience allows. This sensitivity, when coupled with advanced reasoning abilities, lays the groundwork for adolescent identity struggles in childhood. The psychological birth of an adolescent is not marked by the changes of puberty, but by the psychological necessity to create a self image and understanding of the world in which personal integrity can be maintained and which allows separation from those aspects of society that threaten a person's sense of personal agency. Many gifted children prefer the company and conversation of teenagers or adults, question adult values and assert their will, struggle with self-esteem and identity concerns, are confused and overwhelmed by expectations and career decision making, reason abstractly, and are struggling to find a peer group to support their independence. These children are often eight or nine or ten years old. Giftedness forces us to realize

that children may undergo, in becoming adolescents, what Josselson calls "cataclysmic ego changes that hardly make a sound."

Identity, Self-Evaluation and School Achievement. One of the least understood aspects of becoming an adolescent involves how they understand the reasons for their successes and lack of successes. If you ask the average eight or nine-year-old child what they want to become when they grow up, you are likely to get wonderful ideas like "NFL quarterback," "astronaut," "doctor, judge, and cowboy all at the same time." We label these aspirations dreams or fantasies, since we as adults understand the inherent difficulty in achieving these goals. If you ask the same child why another outperformed him or her, you are not likely to hear "because they're faster/smarter/more coordinated/etc. than me." You are more likely to get an answer that does not involve an explicit comparison and which discounts bad performance on the child's part to good luck for the other child, or "it's Thursday," or "the teacher likes him better," or "I dunno." The dawn of the realization that we all have finite ceilings of capacity and the ability to differentiate luck from skill emerges in most children at twelve or thirteen years of age. Since the variation in sexual development is extreme, this figure in reality represents the dawn of formal operational thinking and abstract thinking in average children. Gifted children, however, often achieve this realization years before their peers. When the average twelve-year-old stops wanting to play soccer, we often understand the request as being caused by peer pressure. We sometimes forget that peer pressure to conform has been a strong component of childhood development since early childhood. This behavior of wanting to quit activities that involve evaluation is primarily based on fear of failure. Before, bad performances did not reflect on the child's adult ego. Now a failure makes the child feel that "all the world's a stage and the spotlight is on me!" Teachers of gifted children report significant problems with underachievement starting at about third or fourth grade. The reason for this is likely that this is the time frame in which gifted children begin the struggle to control their image (or, in fancier terms, have control of ego integrity). The so-called self-esteem problems faced by middle school students are also an artifact of this cognitive shift that is poorly understood. Most self-esteem inventories are based on comparison to peers and require a feeling of superiority to peers to

have a high rating of self-esteem. If children are developing this capacity to understand their limits and become aware of other children who are better than they are, they are then faced with the struggle to develop an integrated sense of self that protects them from feeling inadequate. Many parents report that their younger gifted children compare themselves to older kids and are self-deprecating. This behavior indicates that the children have achieved this stage of advanced reasoning and need to be taught to compare themselves against their own past performances in line with personally meaningful goals. Schools and families that use comparison strategies in an attempt to motivate these children only raise their anxiety about being evaluated.

How Parents and Teachers Can Help

1. Discuss with your students/children your expectations and talk about failure. Many kids have highly exaggerated fears of what you will think or feel if they do not perform at high levels. This fear leads them to not take risks and can lead to decreased performance or self-sabotage as a way of avoiding this fear.
2. Make sure your kids have the necessary study and organizational skills to allow them to be successful. Many younger gifted children succeed in school by using memory and language skills and don't develop organizational or critical thinking skills. Reading study skill guides together with your children may be helpful.
3. Before you praise your child, find out how he feels about his efforts and accomplishments. Sometimes he may be upset about something we don't know happened, and our premature praise is interpreted as not responding to how he feels.
4. When talking to your child, seek to develop her sense of personal agency (or knowledge about her means and abilities.) This is done by asking the child to explain her thinking (how did you figure that out, why did you enjoy it, what would you like to do with what you have discovered, how did you resist giving up when it got frustrating, how did you resist stereotypes, how did you use your abilities.)
5. Be open about your own mistakes and frustrations. Do not give them details that are inappropriate for their place in the family, but model for them the idea of working hard and taking care of yourself. Remem-

ber the "do-do" principle: kids do what we do, not what we tell them to do. Research has clearly shown that the confidence of significant adults in their ability to manage stress and expectations predicts children's abilities to deal with their stressors.

6. Be careful to separate your support for your adolescents from your expectations for them. Research with suicidal adolescents (unfortunately, gifted teenagers comprise 25 to 50% of the patients in adolescent psychiatric hospitals) shows that suicidal adolescents report just as much peer and family support as non-suicidal adolescents. The difference is that they perceive that their support is conditional on performance. They report seeing a discrepancy between the importance of their success to their parents and their own achievement, and they feel powerless to change that discrepancy. In fact, the more suicidal the adolescents were, the higher the conditionality of their emotional support. Until children are 15 or 16, parents remain the primary source of emotional support. Falling into the trap of becoming an enforcer or evaluator can lead to a tragic cycle of emotional distancing and further deterioration in family relationships. No grade or college admission is worth sacrificing the emotional connection with your child. Their school problems may actually be a test to see if you will love them when they don't perform well. The pressure placed on parents by the advertising media and our own narcissistic culture often traps parents into fearing that their child will fail if not controlled or pushed to be their best. Kids are very aware of these feelings and hear them as "My parents don't believe in me or my abilities" and "My parents think I am unmotivated and don't care about my future. If they want to be responsible for my future, then I guess I have an excuse to be irresponsible."

7. Do not be afraid to get counseling support from someone who is thoroughly familiar with the psychological development and needs of gifted children. Most therapists are either ineffective or injurious if they do not know about giftedness. Contacting your school district's GATE program coordinator is a good way to start finding a person who can assist your child or family. The truth is that while adolescent development is challenging, adolescents should not show dramatic mood swings consistently.

They should not refuse to communicate with their families, and they should not always seem down or anxious. A problem is a problem if it lasts more than a couple of weeks or is recurrent. These issues are not phases that kids will grow out of, and there is no reason to discount troubled behavior because the person is an adolescent.

8. Lastly, schedule times to talk with your gifted child. Parent outings without friends or siblings are a useful opportunity to keep communication open. It may be difficult, but it is necessary to learn how to communicate with your adolescent gifted child. Many parents of gifted children find that books about talking to teenagers are relevant in elementary school. Make sure that both parents send consistent messages about school and performance expectations in these communications. Gifted children need a united front behind them to support their development of a healthy adult life-style.

The Game

None but us can free our minds
 Trapped down by our modern times
 Where there are simply just a few
 Who would not kill as taught to do
 It's bred in life thru what we've seen
 Glorified on the silver screen
 Taught to us by fear and fate
 This overwhelming love to hate.
 Our children see this all the time
 They learn it quick I think you'll find
 With plastic guns I trust they will
 Learn to shoot and shoot to kill
 As life goes on they see it more
 And parents try to lock the door
 But like Pandora's box was found
 The doors will swing without a sound.
 How can the children learn to love
 As bullets scream thru air above
 The lower that we must duck to hide
 The faster our world seems to die
 Let's teach our kids not hate but love
 And quiet the screaming air above
 Cause bullets fly without a name
 In this a human killing game.

Shane Pickett, Fountain Valley High School

Janet Barkawi, Teacher

A Mother's Joy, A Teacher's Reward

by Margaret Gosfield

An incident occurred last week which moved me in a special way. I was overseeing an exhibit by our elementary GATE students when a woman came up and greeted me. I didn't recognize her; but when she mentioned her name, I knew that she must be Raymond's mother.

Raymond was a student I worried about long after he left my world geography class for gifted 7th and 8th grade students. His mother's comments stirred memories of those classroom days years ago, and when I returned home I searched through the journals I had kept during my early years of teaching. Finally I found what I was looking for.

March 6, 1976

Yesterday was an extraordinary day in my teaching career. It all started Wednesday when I showed the IALAC filmstrip. Actually, it all started in September when Raymond entered my classroom. Raymond is a 7th grader; he's overweight and wears dark rimmed glasses. He's brusque in manner and speech and is often overbearing. He uses large words which even the brightest kids in the class are not accustomed to hearing. He's an easy target to make fun of.

There have been many conflicts in class throughout the year, and this has created considerable concern for me. Tom and Scott, both eighth graders, seem especially to derive pleasure from tormenting Raymond.

Before the kids came into class on Wednesday, I prepared a number of small IALAC signs which I pinned onto their shirts as they entered. It mystified the students and several minutes were spent in speculating as to what the signs meant.

Then we watched the filmstrip. The letters stand for: "I Am Lovable And Capable" The gist of the story is that everyone carries around an invisible IALAC sign, but every time we experience a put-down from someone, a piece of our sign is torn off. After a while many people begin to build walls of separation to protect themselves from being hurt by the put-downs.

The lesson didn't have much to do with world geography, but it did have a great deal to do with adolescent kids and some of the daily pain they experience at the hands of other kids and sometimes even adults. We discussed the filmstrip, and then I asked the students to try

wearing the IALAC sign around school for the rest of the day. Each time they received a put-down, they were to tear off a piece of their sign.

Thursday I asked the kids how things had gone the day before. They responded with comments such as, "Gosh, I never realized before how many put-downs occur in a single day." Their increased sensitivity was very encouraging to me. But I also learned that some kids had gone around making put-downs just so that others would have to tear up their signs. They suggested that we wear two signs—a fresh IALAC sign and also a YALAC sign (You Are Lovable And Capable). Then every time an individual put someone down, he would have to tear off a piece of his own YALAC sign.

On Friday I again asked my students how things had gone the day before. It happened that on that day, I had only 7th graders in the class since the 8th graders were attending a school talent show. A short while into the discussion, Raymond raised his hand and announced that he had had four compliments and 63 put-downs. The class burst out laughing.

This was a shock to me. In my experience, gifted students are generally more sensitive to others' feelings than kids in general. But in this case they found Raymond's statement cause for amusement and for ridicule.

"I wonder why you're laughing," I said. "A classmate has just told us that he had the incredible number of 63 put-downs in one day, and you seem to think it's funny."

At first the students made excuses, explaining to me why they found Raymond unlikely. Gradually I was able to guide them to begin speaking to Raymond directly. And then Raymond was able to face them and even to express some of his feelings. By the middle of the period, kids were commenting, "Gee, I never knew these things about Raymond before," and "Now I understand Raymond's actions better than before." They began to express concern that while they now saw Raymond in a different light, and would make an effort to treat him well, what about the 8th graders? If they tried to talk to them, would the older students just laugh at them? They were particularly concerned about Scott and Tom who tend to dominate classroom interactions and who are Raymond's

chief tormenters.

I don't know what will happen now. I hope I can persuade the counselor to set up a small discussion group to include Joe, Eddie, Raymond and a few others.

That event occurred seventeen years ago. As I recall, things in class did improve. But life was never easy for Raymond. He finished junior high and went on to high school. Later I heard he enrolled at Westmont College. And then one day I saw him back at my school, now as a substitute teacher. My conversation with him in the teachers' lounge at lunch time was brief. Apparently the kids were giving him a bad time, as they love to do to substitutes. More importantly, he reported that he had not been able to find a suitable permanent job. I was glad that he had progressed so far, but I was still uncertain and concerned about his future. And then I saw and heard no more of Raymond...

Until last week, that is, when his mother attended the student exhibit to see the display of a young neighbor child. What she shared with me then touched my heart deeply. She told me that Raymond was now married to a wonderful girl, that he had a good job, and that he was "so happy." She repeated the phrase "so happy" in such a way that I knew she was remembering the mother's pain she had felt when Raymond was hurt by people's attitudes and actions.

For me, the exchange with Raymond's mother brought closure in regard to a student who had remained a big question mark for me. I had carried a concern for him longer than for any other student who had been in my charge. I had no part in his eventual success; but to learn that he finally found his niche in life brought great satisfaction to me. It was a wonderful reward.

Musing on Parental Modeling

by Martha Flournoy

Recently I was on a flight with my mother. My mother is an internationally known musician, working and contributing to the field that is near and dear to her. She was revising her thoughts for an article she was to write for a publication in her field. Her deadline was before mine, since she had already taken pen to paper while I was still contemplating about what I was going to write. It occurred to me that modeling behavior—modeling all kinds of behavior—for our kids is critical. Leadership, social responsibility, kindness, honesty, respect, morality and conflict resolution are just a few of the many important qualities we need to model. But in attempting to be positive models for our children, we forget the other areas for which modeling is critical, such as disappointment, failure and imperfection.

It was many years ago that my mother began giving instrumental instruction to our older daughter and would make the hour trip from her home to ours on a weekly basis. These visits were anticipated by all in our family. Occasionally she would have returned from an international trip and would share her experiences, both positive and negative. Frequently she would tell stories that put her in a far from perfect light. Many of the stories were humorous as well as touching. The humor would stem from her laughing at herself and the situation.

Often these incidents involved "mistake behavior" such as getting turned around and going for miles in the wrong direction in an unfamiliar city or forgetting to do something before leaving home. Once she told of becoming locked in a restroom right before she was to perform. Of course the stories always resolved one way or another. The girls looked forward to her "Grandma stories" and would always wonder if this week she had one for them.

I realized that as parents we do not often model these behaviors; in fact we purposely do not mention these events or situations, since they would reflect on us in other than a perfect light. Even the vocabulary surrounding these situations is negative, such as "stupid," "silly," "awkward," or "dumb."

We, as parents, must become more aware of the importance of talking with our children about our failures. Errors in judgment, traffic infractions, accidents, lack of planning or procrastination are all opportunities to model ways to deal with failure and imperfection in healthy, acceptable and responsible ways. We all do this and move on, having learned from these experiences. Modeling "mistake behaviors" and the ability to handle those situations with humor and perspective, is as valuable as modeling all the "perfect" behaviors we want to impart to our children.

Advocacy Notes

by Martha Flournoy

Recently I attended a workshop to increase awareness of parents on the topic of advocacy. Many points were made that I had heard before, but many of these points cannot be heard enough. The power to effect change or keep the status quo is in the hands of parents. We are the individuals who elect our officials and we are the ones whose sole job is to ensure the best education for our children. Educators are viewed by legislators as knowledgeable, but they may also be seen as having other motives, such as job security or interest in promoting certain programs. Parents are seen as working entirely for the good of their children. One of my first experiences in making contact with one of my legislators made that clear. I was there to talk about the GATE program and I was asked if I worked outside the home. I am a teacher, though not in GATE, so I innocently told him that. It was the end of the discussion. He could no longer see me as a parent, but only as a teacher. Of course this is an isolated incident and most legislators have a much higher regard for the teaching profession than this individual, but I did learn a valuable lesson.

A common excuse for not approaching legislators is lack of knowledge or facts. The one indisputable fact is the effect of a program such as GATE on your child. Parents are the "experts" on that. Legislators know what their aides, their consultants, the literature and their own experiences tell them. We as parents need to make them aware of our own experiences to ensure that our children, as well as all children with distinct needs, are served. The following are some tips on visiting your local legislators.

1. Get a group of both male and female parents which represents the ethnicity and economics of your area together for a visit. Four parents at the most is desirable. With a group of four there will be a free flow of conversation and all will feel more comfortable.
2. Make an appointment. Most legislators are in their districts on Fridays.
3. Know the points you want to make.

4. Make it short.
5. Encourage a follow-up to either the legislator or an aide by asking for some information his/her office might have or by volunteering to send him/her pertinent information. Do send a note of appreciation and encourage him/her to be in contact with any questions.

If it is not possible to visit your legislator, letters are an excellent way of making your feelings known. Letters should have a personal reference to your child and how the GATE program has affected him/her. Excellent tips on writing letters are found in the CAG Advocacy Handbook, pages 27-28.

At a local level, it is most important to stay abreast of what is happening. What affects your child most is what is going on in his/her district, school, and classroom. Here are a few tips on keeping informed.

1. Get to know your school's teachers and the principal.
2. Ask questions. Know the responsibilities of teachers, principals, coordinators, administrators and school board members, and be aware of the chain of command.
3. Get to know the district personnel who are involved with GATE.
4. Go to school board meetings. Make your presence known. Be sure to introduce yourself and let them know that GATE is the reason you are there. There should be someone at each board meeting who is looking out for and is interested in GATE. To share this responsibility, a rotation with other parents should be established.
5. Get to know your school board members. Take them one at a time to lunch.

The power is in the hands of the parents if we choose to use it.

Martha Flournoy is the Parent Representative on the CAG Board from Pacific Region. Her address is 2015 Arlene Avenue, Oxnard, CA 93030.

Homeschool: Where Present and Future Meet

by Isabelle Nidever

It's a dream school. Individualized instruction in a responsive learning environment. Integrated curriculum, students traveling at their own pace through material they've selected, small teacher/student ratio. Active involvement in learning, with learning level and style matched to each student. Skiing down tree-covered slopes, horseback riding, chasing newts in a mountain stream, gardening outdoors under the sun, easy computer access, science exploration in a fully equipped laboratory or rock-hopping at the beach, reading as much and as often as you wish and what you wish without fear of a "pop quiz." Music, painting and photography (not just on Friday,) writing, producing and acting in your own plays. Unlimited resources and community involvement. Pondering, asking questions and seeking answers as you desire. Meeting and interacting with people of all ages, from all places. Dancing and singing your way through the day.

Individualized education is the wave of the future. Yet the needs of our children are pressing *now*. How do parents ensure those needs are met? While district officials and groups of parents and teachers debate about what may or may not be appropriate for labeled students (whatever the label), one alternative, both satisfying and successful, is homeschooling. In California, exempt by certificated tutor (CA Ed. Codes 418200 and 48224), enrolled in private school (Ed. Code 48222) or under district supervision in an independent study plan are three permitted alternatives to compulsory school attendance, according to the Los Angeles County Department of Education. Homeschool is actually a misnomer in many cases, since this alternative often uses the wider community as a classroom to promote active involvement in learning. Independent learning is preferred for individuals who have been encouraged to explore and question and rarely to accept the concept of right/wrong answers, and for whom the traditional classroom is confining and restrictive. It has been proven successful, and test scores as a group are higher than those of conventionally schooled peers (Ray & Wartes, 1991). The intimacy of the homeschooling situation affords an opportunity to use what works based upon the need of the moment. Colfax and

Colfax (Linehan, 1992) report that "the public school child spends approximately 1,100 hours per year in school, but only 220 hours on task." For an efficient learner, this can be uncomfortable, to say the least.

Highly gifted children are asynchronous developers according to Kearney (1992). Educational decisions must be flexible and responsive in order to accommodate the varying emotional, physical, cognitive and perceptual needs which do not necessarily develop together or in any predictable pattern. Denying the existence of special needs in this group is akin to denying diversity of culture and the needs necessarily inherent in distinctions of any kind, yet few schools address the unique needs of highly gifted students, putting them at risk for frustration and boredom when positive experiences should abound. Nancy Wallace (1983) poignantly describes the transformation of her own son from an avid learner to a defeated student whose self-esteem fell dramatically during his school days, prompting their family's decision to home school. His recovery and subsequent joy in family togetherness is inspiring and *reachable*.

Taking responsibility for learning through choice and control is imperative for growth and well-being (Clark, 1992). Humans are born with a sense of wonder and go forth on the path of discovering what the world is about through exploration, experiment, activity and questioning, just as Plato gathered a group of boys about himself, discussing things of interest to the children, wandering through their world with them. The role of educators is to help individual learners access their world, and there are as many approaches to learning as there are learners. Learning is not best accomplished through coercion, routine, drill and repetition, for it is in variety of environment that most learning is inspired.

Individualization comes by paying attention to individuals, beginning at their level, and travelling where they may lead. Involved parents have an edge here. They have an intimate knowledge of their own child and a vested interest in that child's development. This not only enhances the learning process, but develops self-esteem. The two are intertwined and

Isabelle Nidever may be
reached at
9303 Broadway,
Temple City, CA 91780

equal emphasis must be placed on each. To capture the intrinsic motivation to learn with which individuals are born necessitates encouraging curiosity, exploration, discovery, experiment, risk-taking and accepting mistakes as a valid part of the learning process. Creating a responsive environment at home and in the community means respecting and trusting individuals to know what is best for themselves at any given time. Respect and trust are symbiotic relationships between individuals, and maintaining family cohesiveness in today's fast-paced and fragmenting social climate requires close attention to relationships.

Home education affords an opportunity for flexibility, spontaneity, student control and real world experiences in learning. According to Ray and Wartes (1991), "The data suggest that home schooling can compete with conventional schooling in terms of the major agendas of education, academic task and the socializing of children. It seems that home education is a valid, viable alternative that should be readily and intelligently presented to the public at large."

References and Further Reading

- Clark, B. (1986) *Optimizing learning: The integrative education model in the classroom*. Columbus, OH: Merrill.
- Clark, B. (1992) *Growing up gifted*. (4th edition). Columbus, OH: Merrill.
- Colfax, D. & Colfax, M. (1988). *Homeschooling for excellence*. New York: Warners.
- Guterson, D. (1992) *Family matters: Why homeschooling makes sense*. New York: Harcourt, Brace, Jovanovich.
- Kearney, K. (1992). When promising practices go wrong. *Understanding Our Gifted*, 5 (2), 16.
- Linehan, P. (1992) Homeschooling for gifted primary students. *Understanding Our Gifted*, 5 (1), 1, 8-10.
- Ray, B. & Wartes, J. (1991). The academic achievement and affective development of home-schooled children. In *Home Schooling: Political, Historical, and Pedagogical Perspectives*. J. Van Galen & M. Pittman (eds.), Norwood, NJ: Ablex., pp43-62.
- Wallace, N. (1983) *Better than school: One family's declaration of independence*. New York: Larson.

Untitled

The child with her chubby fingers
Dipped the wand in the bowl.
She made a little "o" with her mouth and
Tried to blow.
Slowly a bubble formed.
The child jumped for joy
with her face all aglow.
Her dimpled smile radiated
Beautifully upon
Her small innocent face as she
Watched that one big bubble being
Blown by the breeze.
It seemed so happy and so free.
She looked closer and saw
That the bubble contained many colors
The colors
Whipped and whirled as in chaos.
As every little waft of air picked it up
Forcing it to go with the flow,
The bubble slowly reached
Higher and higher toward heaven.
It got whiter and whiter and
Soon ceased to be.

The old lady with a dimpled smile
Looked back into her life.
Tears began to form in her loving eyes.
A lone tear
Carefully emerged and fell
Silently onto her soft deathbed pillow.
Tear after tear followed after.
She slowly seemed to reach
Higher and higher toward heaven.
She got whiter and whiter and
Soon ceased to be.

Joan Le
Fountain Valley High School
Janet Barkawi, Teacher

Resources for Parents: A GATE Reading List

Compiled by Jo Anne Viserta-Galinis

"I don't have the time to read about it, just give me the main ideas." That seems to be the cry from more parents—not enough time to read about the area of gifted and talented, but desperate for the facts.

And too often, if they do find a few minutes, they manage to pick up a book that is "clinical" or, in the words of some, "a classic textbook." No wonder parents are frustrated when it comes to trying to understand the area of gifted and talented.

So, what is a parent to do? Well, you can go to conferences, workshops and seminars, but the easiest method of discovery is still finding that all-important book. To make your search a little easier, the following list is offered in the area of beginning readings on the subject of gifted and talented.

Adderholdt-Elliott, Miriam. (1987). *Perfectionism: What's Bad About Being Too Good?* Minneapolis: Free Spirit Publishing Co. (Discusses perfectionism syndrome—a must for everyone!)

Alvino, James, et al (1985) *Parents' Guide to Raising a Gifted Child*. Boston: Little, Brown, and Co. (Includes wide variety of topics and information.)

Baskin, B. & Harris, K. (1980) *Books for Gifted Children*. New York: R.R. Bowker Co. (Listing of books for gifted children to read.)

Delisle, James R. (1984) *Gifted Children Speak Out*. New York: Walker and Co. (Candid comments about growing up gifted from gifted students in the United States.)

Erllich, V. (1982) *Gifted Children: A Guide for Parents and Teachers*. Englewood Cliffs, N.J., Prentice-Hall. (Practical suggestions.)

Featherstone, Bonnie D. & Reilly, Jill M. (1990) *College Comes Sooner Than You Think!* Columbus, OH: Ohio Psychology Publishing Company. (Easy to follow, step by step college planning guide written for students and their parents to use together.)

Galbraith, Judy. (1984) *The Gifted Kids' Survival Guide (For Ages 10 and Under)*. Minneapolis: Free Spirit Publishing Co. (Written for gifted kids, viewpoints of children, coping techniques.) Also from the same publisher *The Gifted Kids' Survival Guide (For Ages 11-18)* and its sequel, *The Gifted Kids' Survival Guide II*.

Kerr, Barbara. (1985) *Smart Girls, Gifted Women*. Columbus, OH: Ohio Psychology Publishing Co. (Understanding and guidance of/for gifted females; includes brief biographies of eminent women.)

Lewis, David. (1981) *How to Be a Gifted Parent*. New York: Norton. (For preschool.)

Perino, Sheila and Joseph. *Parenting the Gifted: Developing the Promise*. New York: R.R. Bowker Co. (Characteristics and supportive strategies.)

Saunders, Jacquelyn. *Bringing Out the Best*. Minneapolis: Free Spirit Publishing Co. (Information and topics dealing with young gifted children.)

Takacs, Carol A. (1986). *Enjoy Your Gifted Child*. Syracuse, NY: Syracuse University Press. (Insight into giftedness as it applies to parents and adults who have contact with the gifted child.)

Vail, Patricia L. *The World of the Gifted Child*. New York: Walker and Co. (Parenting anecdotes and activities.)

Warren, Sandra. (1991). *The Parents' Guide to Teachers of the Gifted/The Teachers' Guide to Parents of the Gifted*. Monroe, NY: Trillium Press. (A uniquely designed double-fronted book to help dispel myths and misunderstandings between parents and teachers of the gifted student.)

Webb, J., Meckstroth, E., & Tolan, S., (1982) *Guiding the Gifted Child: A Practical Source for Parents and Teachers*. Columbus, OH: Ohio Psychology Publishing Company. (Focuses on psychological aspects of gifted—a must for anyone concerned with gifted youth.)

This article is based on a similar article in the CAG Parent Handbook, a publication which is available from the CAG office for \$3.00 per copy plus tax and postage (\$4.00 will cover it all.)
Jo Anne Viserta-Galinis lives in Huntington Beach. She is the past Orange Region Parent Representative to the CAG Board.

Parent Round Table

Some parents
from the
Garden Grove
USD
Parent
Advisory
Committee
discussed
what it's like to
be parents of
gifted children.

Communicator: As parents of gifted children, what do you think is the most important thing you can do for them?

Terry: Parents have a responsibility to keep them stimulated. Any child who's going to live up to his potential in life needs to be stimulated by just general good parenting.

Paul: It's taking the child's abilities and helping to mold and shape them along the lines of their desires and interests, not what we as parents think they ought to want. They need the freedom to grow and to blossom according to their gifts and abilities.

Oy: Provide them with a lot of experiences, vacations, plays, science fairs. I have a really hard time realizing just how young they are. My son is bright, so I thought he was capable of so much, too much, and I made a lot of demands on him that didn't fit his maturity level.

Terry: Is there any difference between parenting a gifted child and parenting a regular child?

Cindy: I worry about their not living up to their potential. I want them to do something with these gifts that they have. We also face the underachiever syndrome, and that's been a challenge for me lately.

Communicator: How are you handling that?

Cindy: We're trying to identify his strengths away from his older brother's (who's also gifted) strengths and let him become his own person. He has a new puppy, and he's reading about it and it's his project. Like you said, Paul, finding their interests.

Communicator: If you say to him, why didn't you get a better grade, do a better job, what does he say?

Cindy: "I didn't have to. She said this was enough."

Oy: It seems that 5th grade is when all of a sudden the kids get lazy or something. School is so easy for my son, but I think that sooner or later it's going to get more challenging, and then he won't be doing as well as he should. I'm kind of concerned about that.

Paul: I'm thinking about what Cindy said about that balance between not pushing them too far but making sure that they're not an underachiever. It's hard to know at what point I'm expecting more than I should. I have to keep reminding myself that he's only seven. I can't expect him to come up with a new theory of relativity yet! Even in second grade I see the attitude that I think has permeated our society that there's something about hard work that isn't fun. If it's fun, it has to be easy. I want to encourage him to know hard work can be fun.

Communicator: As parents of gifted children, do you find that you can reason with your children and work with them on discipline this way?

Terry: Yes, it seems to me that my children and the other children they play with do have a better ability to understand the reasons for actions and behaviors. If you can present it logically, they'll grasp it. They don't necessarily like it, but they can understand.

Mary: That ties in with what Oy said about not treating them as children. We talk out a lot of things and try to reason, but sometimes I think we tend to not come down to their level.

Paul: To me it is imperative that they understand reasons so they don't view parents as a totalitarian dictatorship.

Oy: Sometimes I look at my son and I think, gosh, he's so bright but he just doesn't have any common sense. He can get the more important things in life, but things like hanging up the towel...

Communicator: What about the child who can read books far above his grade level—the second grader who can read sixth grade books—but whose emotional level is still second grade. Is that a problem?

Terry: I'd try to remember that this is a seven-year-old and not expect more than they are ready for.

Cindy: When my child was in fourth grade, all the kids started reading *Alien* and books like that. I don't like to read those kind of books, but I found that I needed to know what he was reading; not take the books away from him but work with him in understanding them.

Terry: Our kids don't have any problems telling us, "I can read these words but I don't really understand this and I'm not enjoying it." They like to read *Archie* comics. I have to be careful not to smother that!

Mary: If they're not ready for the material, it just bypasses them. If they're reading the newspaper and they're not ready for what's there, they may read the words but it just doesn't go in.

Communicator: Do you let them go to the library and pick out anything they want to read?

All: Yes, oh yes.

Terry: If you want children to be lovers of reading and the library, you keep taking them to the library and it becomes part of their lifestyle. They don't know any better. They just choose the library.

Communicator: Have your children all been in GATE programs from a very early age.

(All indicated first or second grade. Mary and Paul have each homeschooled their children for a period of time. They both said it was a wonderful experience and that their children were able to move ahead rapidly in this situation.)

Terry: Any classroom is a trade-off, since you are dealing with thirty-some different personalities. If any teacher could take one student aside for several hours a day as in a homeschooling situation, nothing but good could come from that. Homeschooling isn't always practical and it isn't the world we live in either.

Mary: It was the enrichment that was so important about homeschooling. You could just dig and dig and dig.

Terry: We don't believe in accelerating a child. We believe in allowing a child to go to his level and enriching everything possible.

Communicator: Do you think the special day class for GATE is a good way to go?

Oy: Oh, it's a definite advantage.

Paul: It's the only way to do it right. They're challenged, not bored.

Cindy: We've made sure our kids are involved in other activities outside of GATE: sports, music, things where they were mixing with other children.

Paul: Most GATE teachers spend time talking to the kids about their role in life. You know, you don't want to develop a nerd, and that's what everybody was concerned about when we first began. The teachers help them understand the real world they live in. Our children do understand that not everyone sees things the way they see them. They have a lot of ability to let other people be themselves.

Cindy: It really is our obligation to see that these children do understand themselves and understand what their obligation is. I'm so happy that they're doing something with the junior high GATE kids. When our older son went to junior high, he was mixed with all the kids and all the teachers. It was a different world. We were struggling with trying to explain to him that he came from a program where his needs were met, but now it wasn't going to be the same. It was difficult. High school is great. He's had excellent AP classes.

Thanks to Mary and Terry Horowitz, Oy Yamamoto, Cindy Ortega, and Paul Payne.

Gifted Kids Don't Come With a Set of Instructions

by Fran Westbrook

I became interested in gifted education for five reasons. Their names are Jeff and Randy, Jane, Michael and Meredith. Jeff and Randy are my two sons. Jane, Michael and Meredith were three students that I had when I was teaching in West Virginia. I taught 4th grade and that year I only had 14 kids, but three of them had IQ's of over 150. I really was unprepared to deal with them. We had learning centers and extra activities, but I wasn't really challenging them.

It was Jane, especially, who made me aware of how different these children are. She was extremely bright—the best at everything. She was in a theater group that did plays for children. She played the part of Alice in *Wonderland* and all of her actions and reactions were just perfect. She became the subject of a case study I did for a class I was taking. She told me all of the things she wanted to be. She was going to go to law school, and she was excited about having her own apartment. On the side she was going to study entomology. (I had to go look it up, because I wasn't sure if it was the study of words or bugs, but I knew it was something I didn't know anything about.) She had her whole life planned out, but I when asked her what was so exciting about having her own apartment, she said, "Cause then I won't have to eat my Mom's spinach." She was still only nine years old. So remember they're children first and gifted second. A lot of the problems they have are the same problems that other kids have, but because of their heightened intensity and awareness, the problems can become a more difficult.

The Gifted Label

It's very important to remember that you may have several children, and they're not at all alike even though they may all be gifted. One might be gifted in an academic area, maybe in a very specific academic area—perhaps math or reading. Another might be gifted in many different academic areas. A third might be very talented and creative in the arts.

Gifted is a label that you can't really keep a secret. Some people don't want to talk about their child as being gifted, but the kids know it.

They know when they're 4 or 5 that there's something different about them. They look at things differently, they think differently, and this needs to be acknowledged. I think it's important to talk about it, and what it actually means. It's also important that they understand other children's gifts, that not everybody sees everything just as they do. It's important that they realize that there are traits other than intelligence that are important, such as love, loyalty, generosity, patience and understanding. Being brighter doesn't guarantee that they're going to be happier or healthier, more socially adept or successful. It also doesn't necessarily mean that they're going to be hyper, difficult, overly sensitive, or neurotic nerds.

It's important that these children have friends who are like they are. If you have to go out and import them, if you have to drive several miles to get a kid that's at the same intellectual level that yours is, I think it's very important that these children have playmates who are similar in interests and abilities. It's also important that they spend time with true peers in the school setting.

The gifted label may cause problems socially for the parents. You are not going to become most popular parent on the block because you have a gifted child. Parents of more average children have no sympathy for any problems which you may face as the parent of an extremely intelligent child. Finding a support group of other families with gifted children is frequently as helpful for the parent as it is for the child.

I'm reminded of a story that Dr. Barbara Clark tells of a student who came to her named Rocky. The reason that the parents brought Rocky to a special summer school for gifted children, was because Rocky was not talking. Rocky didn't talk at all. They had taken him to doctors, they had taken him every place to see what was wrong, because he had just completely shut down. The parents didn't know if it was neurological or psychological, or if he had something physically wrong with him. She agreed to take Rocky. After several days in the class—which always started with a warm-up

This article is excerpted from a presentation at the CAG Conference in San Jose, March, 1993. Fran Westbrook is a GATE Resource Teacher for Redwood CSD. Her address is 2696 Miller Avenue, # 4, Mountain View, CA 94040.

session in the morning where they would throw out some kind of challenging question or a quotation—suddenly Rocky's hand went up. She immediately called on him, and he gave an off the wall answer, really bizarre. But nobody laughed and they all discussed it. Several days later she saw Rocky walking down the hall just happy as a lark. He had been talking and participating, and he had his arm around a new student. "Aw, you're going to like it here. This is a great place." School had become safe for him. What happened to Rocky was that he had a teacher who had just been fed up with his bizarre answers and his constant talking, and she told him to shut up. That was it. She didn't ever want to hear him again, and he literally shut down, just completely quit talking.

Permission to Fail

We need to let gifted kids know that it's okay to fail. I'm not talking about making straight F's on a report card, but they get a lot of pressure, both external and internal, to be successful. Maybe students need to "fail" at something in elementary school, not get an A on a project or not win the spelling bee or the science fair. It's important to let children know that they don't have to be perfect in everything. Many gifted students drop out of college because it is the first time in their lives some of them have ever known any kind of competition. They've always been in the bluebird group.

It is important to give these students praise, not just for what they do but for the kids that they are. If they only hear praise for all of their accomplishments, that's what they think they are. I'm a good grade. I'm a perfect paper, but maybe I'm not okay myself. One of the problems I have with a lot of my students, is getting them to take a risk. They won't try something because they're afraid of not being perfect at it. They need your acceptance for who they are. And I tell you, this is not always easy. My older son is now 32 years old, and he should have been an adult in the 60's instead of being born in the 60's because he was a hippie. Long hair was not in style when he was in high school, but his hair looked like Wolfman Jack. He was wearing ripped up jeans when it wasn't in style. He wore Army boots to school. He was just kind of a rebel. He had a backpack before any other kids ever heard of backpacks. In addition to that, his grandmother had given him a long red scarf and he wore that. We're in the middle of July, and he has a long red scarf tied around his neck. It was hard to walk down the street

unobtrusively with this kid who was 6 feet tall with a big voice. I was trying to walk along and hope that maybe people wouldn't realize I was with him. I had to take a look at that and admit, yes, this is my son and I love him.

Home Environment

Your home can be a stimulating experience for your child. You're the one who is with him most of the time. You can take him to the library, you can provide him with books, you can share the theater, recreation, travel, experiments and all the things you can do at home. You can be a source for this child and provide the things he's going to need. Home must be a place where knowledge is valued. If you don't value knowledge, if you don't like to read, then your child isn't going to either. Home should be a place that will nourish these capabilities. It's important that home is safe and has a good atmosphere for learning.

When your child does show good judgment, let him know. Sometimes we get into the habit of pointing out only things that they do wrong. It's important that children know when they've made a wise decision, because they form their sense of self only in the reaction that they get from other people. This doesn't mean that you never bawl them out, that you don't have to discipline, but the message must be clear—"I don't like what you did" not "I don't like you."

Mark Evans solved this problem in our family. My younger son is very creative. He never liked to do anything the same way twice. One day when he was about four, I was in the kitchen and I saw him waving out the window, talking and waving. So I walked over to see who he was talking to and there wasn't anyone there. Right then, Mark Evans came to live with us. Mark Evans climbed all over his dad's car, Mark Evans got into all kinds of trouble. We even had a friend whose first question when he came to our house was, "What did Mark Evans do today?" This went on for years. He never forgot where Mark Evans lived, where his grandfather lived, that his uncle was Bob Evans, you know, farm sausage guy, and we knew the cemetery where his great grandfather was buried, after he'd been in a war, and how his father made money. He was the sheriff. I said I didn't think sheriffs made that much money. "Oh, yes they do, you know, when they capture the bad guys and they get all the money." So Mark Evans went on a trip to France one time on that money that his Dad got. Mark Evans got blamed

for everything, so Mark Evans had to go home.

Listen to your child. Pay attention to what he is really saying. I saw a child and a father in a bookstore one time. The kid was trying to get the father's attention and the father was busy looking at his own books. And I thought, this father's going to wonder some years down the road why the boy doesn't come to him anymore to talk.

Their questions can be difficult. If you don't know the answer, tell them you don't know. Send them to the source. I have told my class many times I really don't know the answers, and they have a lot more respect for me because I can admit that to them.

Teaching Responsibility

These children need responsibility. They need to make some decisions for themselves and live with the consequences. You may see that their idea might not be the greatest, but they have to learn that on their own and live with it. They can manage their own money. They're going to make mistakes but that is part of the process. If you're going on a trip, let them plan part of the trip. Let them be the map reader or the note taker, or make the budget, or keep the list of the groceries if you're going camping.

They can also argue very persuasively about why they shouldn't be doing something. Since there are certain requirements that you have to have around the house, there are some rules that you have to live by. Sometimes you really need to stick to your guns. Tell them, "I'll think about that and I'll get back to you tomorrow." That will give you a chance to think. They need rules but they must be realistic ones. I have only four rules in my classroom. We discussed them the other day, since I was having a problem. We discussed the rationale for each rule. The students decided there were good reasons for each of the rules, and therefore they were pretty easy to follow. You can be democratic with your gifted child and explain to him what the reason is, and most of the time he will understand that and will go along with you.

Gifted children are often able to complete tasks very quickly and very easily, and this also tends to make them very sloppy. This can lead to poor study habits. You might want to try the ABC's of Homework. A is "all by myself." Let the kids do the homework by themselves. You don't have to be the teacher. B is "back off." Only go in to help them if they really get stuck. C is "call it quits" at a reasonable time. They still need their sleep and there are certain times

when it's time to quit studying.

You may find yourself dealing with the word "boring." One of the things I tell parents is that kids figure out very quickly in life that if they say something is boring they can often get out of it. Boring can mean a lot of things. It might really be boring. I've been in a lot of classrooms in my lifetime and there are some that are just plain boring. But boring can also mean "I don't want to put that much effort into it since it's not my main interest. I'd really rather be doing this."

Daydreaming is important. Children need time to think. You can't be creative on a time schedule. If the kids don't ever have any time to lie on the bed and just look at the ceiling and do nothing, how can we expect them to be creative? I'm reminded of a story that I heard about a teacher. She was looking back at her student and he wasn't doing what he was supposed to be doing. She asked him, "Johnny, what are you doing?" He said, "Well, I'm just sitting here thinking." And she said "Well, stop thinking and start reading."

The Specialist and the Generalist

Many gifted children like to specialize. Don't be upset by that. You might have to live all year with dinosaurs. You might have to have a dinosaur bedspread, all the books in the library on dinosaurs and models of dinosaurs every place you look. If it doesn't pertain to dinosaurs, they don't want to read it, they don't want to see it, they don't want to hear about it. But this can change overnight, so don't get upset because it might be Star Wars next year or something else.

The flip side of that coin is that some children have so many interests that their rooms are incredibly cluttered. Even their minds seem cluttered. They can be interested in 10 or 20 things at the same time. I had a little boy a couple of years ago, a third grader named Danny. We'd been studying about monsters and he was supposed to be writing his story about the monster he had created. Danny always did have a hard time sitting still. I understood this and let him move around a lot. On this day he would sit at his desk and write a little bit, then he would run over to the corner where another little boy was sitting. Then he would come back to the desk, and then he would run back to the corner. I was ready to go over and try to get him on task, thinking he's got to write this story and it's important that he finish this project. Then I realized what he was doing. He was playing

chess—and winning—over there at the corner table, and he was writing a story over here at his desk. When I read his story, it was one of the best in the class.

He was playing chess
—and winning—
over there at the corner table,
and he was writing a story
over here at his desk.

Appreciate their work. As I said earlier, don't always be a teacher. You don't have to say, "Well, this is a nice picture but wouldn't it have looked nicer if you had made the clouds a little bit bigger, made the sky a little bit bluer." You don't have to constantly analyze what they're doing. And if you don't know which side of the picture is up, ask them to hang it on the refrigerator. Criticism and unduly high expectations often kill creativity, so curb your desire to criticize. That doesn't mean you have to accept anything just because they've done it. Sometimes there are things that are really just too sloppy and not done well.

Help them handle disappointment. They're going to have a lot of ideas that other kids don't accept, and they need to learn that everyone isn't going to appreciate what they do.

Very early in life gifted children have a highly developed sense of justice which often leads to unrealistic goals for reform. They have an advanced level of moral judgment. They worry about what's going on in the world. They have religious concerns. They're humanistic. They have a very difficult time coping with discrepancies and hypocrisies. My son now lives in Delaware and every time there's a march on Washington, I watch for him, because whether it's saving the whales, protecting women's rights or whatever, he's usually there protesting. But he did learn early that there is an appropriate way that he can make a difference.

Underachievement

One of the very special problems of gifted children is underachievement. Some gifted children fail to achieve because they are perfectionists, and they think, "If I can't do it perfectly, I'm not going to do it all." Sometimes underachievement is the result of a desire for social comfort, a sense of belonging. Sometimes they

have a desire to pursue specific interests, and so they only want to do what they like to do, letting everything else go. There may be a developmental delay or some kind of learning disability in gifted children.

Sometimes you have an angry child whose parents only love him when he is achieving. In some cases the father never gives approval to the child. Nothing is ever good enough for him, in the child's eyes. An over-enhancing mother may try to make up for that and help the child all the time, bailing him out when he's in trouble, helping with homework so he won't get any farther behind. This gives a double message to the child, "My father thinks I'm not good enough and it must be true because my mom has to sit here and help me with everything."

Instead, take away some of the pressures, give more positive evaluations, avoid sarcasm, be patient, avoid nagging and bribery. Don't reinforce bad concepts by saying, "You never finish anything." Don't reinforce the gap between potential and performance by saying, "Well, you're in GATE, why don't you do such and such?" Don't allow a child to apply damaging labels to himself. Be positive and try to help your child develop self-confidence.

Advocacy

There is a time to be a pushy parent. I know sometimes parents hang back and say, "I don't want to appear pushy, but I've got this other child that's coming along who's never been tested." Go talk to somebody. You can refer your child yourself. I had a little boy the other day come to my class who had referred himself. While he was in being tested for a learning disability, he told the psychologist, "You know, I really think I ought to be going to the GATE class. The child's verbal score was astronomical, probably one of the highest that I have. He does have a learning disability—a severe learning disability—but he is also very gifted."

Parents can make a difference. Go to the school board meetings to find out what they're doing. Write to your legislators, talk to your legislators. If it weren't for parents, the gifted program would have sunsetted years ago.

Above all, always remember you are the most important people in this child's life. Enjoy it, because of all the labels, gifted is certainly the best. To contribute to the world is a challenge that we all have. To contribute greatness is an opportunity that only the gifted child has.

Mentoring: It's Not Just for Our Children!

by Sue Benzinger

Parents are an important and very necessary part of a healthy school atmosphere for GATE students. We can be involved as volunteers at the classroom level, but even beyond that, we need to be able to promote, protect and help build the GATE programs that our children benefit from. As parents, we should realize that now, more than ever, our presence needs to be felt at school. Mid-spring is the time when school budgets are formulated, and it behooves us to be aware of this process and participate in it, since so much of the program policy which affects our children is driven by dollar considerations. This is a time of reduced school budgets, dwindling resources and staff cutbacks. Questions of local control and site-based management, as well as issues of categorical funding reform, may affect GATE programs. Protecting the GATE program in our school district and at our school site is imperative, and there is no one more powerful and able to do this than parents of the GATE children.

Sue Benzinger is the Redwood Region Parent Representative on the CAG Board. Her address is 4673 Kneeland Road, Kneeland, CA 95549.

Shades

Blue shades the color of a crystal-clear sky.
Blue is the sob fleeing from my sorrowful eye.

Lavender enhances the starry twilight hour.
Lavender enfolds the beautiful flower.

Scarlet is the rose, cut with a long stem.
Scarlet is the blood, surging from a lost limb.

Cherie Jolly
Allen School, Garden Grove USD

While that is all well and good to say, becoming a seasoned advocate for GATE may be difficult. Educators, like so many others, have a special (and sometimes baffling) vocabulary to describe their work, and a parent who is relatively new to participation in her local school may well feel that she is having to learn a foreign language just to know what's going on. The special process of school budgeting and finance can also be confusing to someone who has not been a part of this before. Becoming an activist for your child's education may seem a daunting task.

A big job, yes, but not impossible. Here's where you can use a mentor, someone who is experienced and knowledgeable and can help you become an effective participant. First of all, get to know the people at your school. Introduce yourself to your child's classroom teacher and let her know that you are an interested parent. Ask questions. Learn how the system works. Get to know other GATE parents, work with them, share ideas and information. If this is your first experience with the GATE program, talk to parents who have older children who have been in the program for a while. They can often share much valuable experience. Become part of the local GATE parent/teacher association, if there is one in your area. Contact your regional representatives for CAG and get to know them. Meet the GATE coordinator for your school district and find out all you can about the legislation which affects GATE programs.

With all this input, parents can become active and positive participants for GATE. They can attend committee or school board meetings when decisions are made which may affect GATE programs. Parents are a welcome addition to any school decision-making group, and as parents you have a very powerful voice. USE IT! Get to know your school board members. They will welcome and appreciate someone who is informed and can speak succinctly on a topic. Cultivate these links, because this is an investment over time. Be persistent. Fix your eyes on a goal and remember that our job is to help the school fit the education to our children.

Being the Parent of a Gifted Child

by Vera Eby

"School life
should grow
gradually out
of the home
life...
It should take
up and
continue the
activities with
which the child
is already
familiar in the
home."
John Dewey

What should home activities be and which qualities should parents of the young gifted child strive to nurture? I would like to suggest that appropriate activities are those that encourage curiosity, exploration, risk-taking, and most important of all, love of learning.

Reading. It's been said by many others, but it can't be emphasized enough: reading aloud to a child should begin as early as possible and parents should read to the child every day. It is my experience that all children love to be read to. When I read to my younger son, my other son, who was five and a half years older, loved to join us, and eventually he too liked reading out loud to his brother. I periodically read to my high school students, even the ones in honors classes who are generally good readers.

Many gifted children are early readers, starting well before kindergarten. With these children, select three types of reading experiences: books they can read themselves, books you can read aloud to them (*Winnie the Pooh* was a favorite of my sons), and books you can read aloud together, taking turns. Be sure your reading is interactive, asking questions as you go along. Who is _____? Why did he do _____? What would you have done if _____?

We parents have to remember that we are important early role models for our children, and if we want children who will be readers, we must be readers. It is as important that your children see you reading daily, for pleasure and for enrichment, as it is for you to read to them.

Writing. At the earliest age a child should begin to write, even before he or she can write. Encourage your child to make up a story and to draw the pictures, illustrating the story. Have him/her tell you the story so you can write down the words. Keep it simple. Then read the story back to your child and to other members of the family. When my older son was about four or five years old, he "wrote" a series of stories about a Martian. He continued writing, and by the time he was in fifth grade he had written many stories and plays, but he always enjoyed looking back at those first efforts and chuckling at his own "baby" experiences at writing.

There are some wonderful activity books available that encourage children to create char-

acters and stories. A favorite my sons enjoyed was one in which they each created a monster. We were in Hawaii, but in our house there is always "homework," even in the summer on a trip to Hawaii. At ages eleven and six my boys loved monsters, so I selected this as our "homework" topic. Every morning my older boy drew and wrote about his monster, following page by page instructions to fill in details about the monster's life and personality. The younger son did the drawings, dictated to me, and I wrote the words. They had a great time! The younger one in particular was convinced that "homework" was "fun-work," and isn't that an attitude we would like our children to have?

Workbooks that will encourage creative writing can be found in teachers' exchanges and at conferences like the CAG conference where publishers display their wares. One book I have seen which looks like fun is *Create a Character*, which is published by Autonomous Learning Publications and Specialists in Colorado.

Enrichment Activities. There are varied activities that we parents can do with our children: provide puzzles, mazes, and other mind benders, games to build thinking skills, trips to museums, aquariums, and historical sites, or math and science projects. The Usborne books, available in many bookstores, are a wonderful collection of books which offer information and activities on topics as diverse as architecture and reading-puzzle adventures. Their book of *Science Experiments* is filled with easy at-home science activities.

Most important of all, share your loves and interests with your children. Let them see your enthusiasm for old movies, American history, Claude Monet, or wood working. Let them join with you and perhaps develop the same interests. Take them on trips. We spent two summers on the East Coast where we visited battlefields, museums and buildings of historical interest. We saw Gettysburg, Old Ironsides, the Smithsonian and the Old North Church. We even did genealogical research at the National Archives. My sons had a wonderful time and developed a love of history.

Above all, enjoy your children. All too soon they will be grown.

Local Parents "Piggy-Back" on CAG Student Grant Program to Meet the Needs of District Gifted Students

Melinda Johnson, *Parliamentarian*
Parents and Advocates for Gifted Education, Ventura Unified School District

After years of existence as a lobbying group, spending most of our energy trying to convince legislators and local boards to continue to fund GATE programs, PAGE (Parents and Advocates for Gifted Education) decided to do something proactive instead of reactive. Our over-worked teachers, with their huge class sizes, do not have much time to encourage the truly individual efforts of their GATE students. We, as parents of gifted students, know that can produce wonderful works.

We were aware of the CAG Student Grant Program, in which GATE students throughout the state are encouraged to submit applications for grants up to \$500.00 for special projects or instructional opportunities. We thought this was a wonderful idea, but we knew from the past that only two students in all of California receive these grants each year. The chances that one of our local students would win such a grant were rather small.

We decided to "piggy-back" on CAG's student grant idea and apply it to the local level. We agreed that our grants would be much smaller but we would offer them to a larger number of students. Our hope was that they would provide the encouragement needed by gifted youngsters in our community to explore and develop ideas beyond the scope of their GATE classes.

PAGE budgeted \$450.00 for 9 grants of \$50.00 each and solicited applications from elementary, middle and high school students. We asked the students to tell us what project they would like to do, set forth a budget to accomplish the project, explain what they expected to achieve from the experience and how they would share this with their fellow GATE students. To be on the safe side, our application blank has a place for the parent to guarantee that he or she approves the project and will

support the child's efforts, and for the GATE or Honors/AP teacher to approve the concept.

Coordination with the head of the GATE program is essential. Flyers go to the students in their classrooms and announcements are made in the GATE newsletter. We all know where those flyers often wind up and announcements often are overlooked in the newsletters. So our GATE coordinator emphasized in all her sessions with GATE teachers that they should encourage participation by their students.

One person must be in charge of all aspects of the process so that nothing slips between the cracks—from the receipt of the applications, circulation to the judges, grant decisions, receipt and acknowledgement of the final product. However, everyone can participate in "talking up" the program and seeing that it gets adequate exposure through the press and in the schools.

The first year we received only a small number of applications, and only a few of them were really well thought out. They were also from younger students, mainly 4th and 5th graders. But the second year we received more and better applications, including a group of high school students who wished to pool their grant monies and make a video on poetry appreciation.

After receiving the applications, we circulated them to three judges who awarded points based on creativity, feasibility and benefit to other GATE students. We asked a college administrator, a mental health professional (both were also parents of gifted children) and a GATE administrator from a neighboring district to be our first three judges. The judges' comments, point count and recommendations were returned to our Board of Directors, who made the final decision regarding each grant. Our judges were gracious

enough to make lengthy comments and allow us to pass them on to the applicants, whether awarded a grant or not.

When we received the finished products, we did everything possible to display them to the largest audience we could. One photographic album of local architecture received widespread press coverage, and we are sure, resulted in increased applications for us the next year. We displayed the works of the students at School Board meetings and at individual schools' Parents Nights, or in their libraries. The students were acknowledged in our newsletter. In short, there was a lot of positive reinforcement.

After two seasons we have original cartoon books, bilingual books, sign language demonstrations, videos, and maps with many other exciting presentations planned. Because of the press coverage of the architectural portfolio, we have had offers of increased funding from private business. Because our timing is now set, this year's finished products will be presented to GATE students in the fall, just before the 1993-94 applications are distributed. The success of this program has been heartening to us as parents and to GATE teachers, who know it takes extra effort to help these students realize their potential. The whole process of taking something from a rough concept to a finished product is so satisfying and uplifting that the program sells itself after the first year.

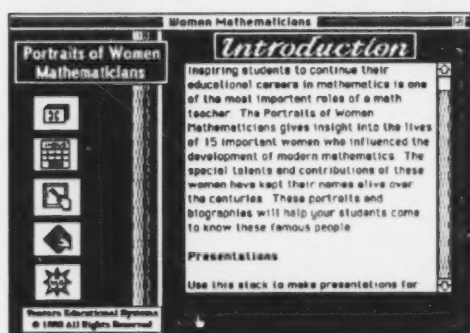
Application and judging forms, sample acceptance and denial letters are available for anyone who is interested. (All denial letters contain suggestions for improving the application the next time.) For further information call or write to us at PAGE, P.O. Box 6028, Ventura CA 93006-6028 or call our District GATE Specialist, Margaret Gosfield at 805/641-5000.

TECHNET

Terrie Gray, Editor

In the April TechNet, I listed some criteria for evaluating curriculum and gave instructions for creating HyperCard stacks. I do not believe that every teacher needs to author instructional materials, since there exists a wealth of excellent resources. This month I will review one commercial software package that is appropriate for use with gifted students.

- It encourages elaborate, complex, and in-depth investigation of information.
- It integrates language arts, social studies, and math.
- Its format supports self-directed learning and creativity.



Title: *Portraits for Classroom Bulletin Boards: Women Mathematicians*
 Author: Susan and John Edeen and Virginia Stachmann
 Publisher: Dale Seymour Publications
 Distributor: Ventura Educational Systems
 System requirements: Mac Plus or higher
 Format: HyperCard 2.0

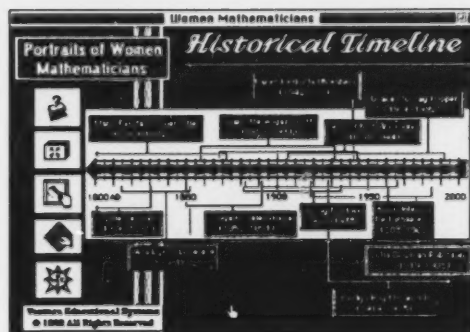
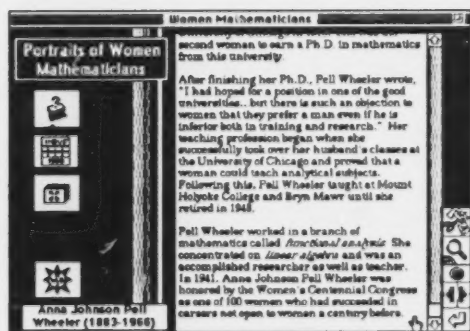
This program, which carries a retail price of only \$29.95, includes one disk and a 35-page booklet. It features 15 prominent women mathematicians from 370 A. D. to the present. The layout of the booklet is very simple: the struggles and achievements of each mathematician are described in a full-page biographical sketch which is accompanied by a full-page black-line portrait. The stories of these women are inspiring—students will see not only that each had to overcome significant obstacles, but also that many achieved career success while nurturing their children and giving humanitarian social service. The introduction to the booklet suggests that the sketches and portraits can be used not only for bulletin boards, but also as starting points for research or writing ideas.

The first card (screen of information) of the HyperCard stack states an objective for this program: to "[Inspire] students to continue their educational careers in math..." The stack is an excellent example of the inherent interactivity of HyperCard. In the biographical sketches (somewhat more detailed than in the booklet) students can click on unfamiliar terms and go directly to the glossary. They can click on a button to see a global and country map of the mathematician's origin. Information is accessible in a variety of ways: by clicking on a name by its point on a time line, by clicking on a name in the index, or by clicking on a title on the directory card.

The layout of the stack is clear. Navigational buttons make browsing through the stack a simple task. One button even simplifies the copying of a portrait to the student's own presentation or report.

The activities section contains two games, one a crossword puzzle, the other a hidden-picture portrait identification game. They are primarily for entertainment value—higher-level thinking would occur in creating presentations, or assimilating data for a research report.

I am pleased with the *Women Mathematicians* program and feel it is a good resource for our students who need honorable role models. In the Fall Ventura Educational Systems will introduce *Women Artists*, *Women Writers*, and *Women Scientists*. Judging from the quality of the current program, we have a variety of excellent resources coming.



TECHNET TWO

DNA Sleuth

by Casey Dunn and Terrie Gray

Casey is a sophomore from Twain Harte who has served on the SAGE Leadership Team for two years. Since he was one of the recipients of this year's CAG student grants, it seemed fitting to ask him to describe his work. And, since it is an example of how technology can be put to work, I'll proudly include it as part of the TechNet column. The following combines his essay with additional comments from a telephone interview.

Congratulations, Casey—we're ALL proud of you!

With the birth of the biotech industry has come a flurry of interest in genetics and microbiology. Many are intrigued with the actual science and the social issues that come with it. An excellent example was presented by Michael Crichton's *Jurassic Park*. Because of commercial interest, science is progressing at an amazing speed. As new procedures are developed and fast-paced discoveries are made, the old procedures become extremely refined and simplified, even so far as to allow them to be done by interested people in their own homes. (With a little determination, anything's possible.)

Having seen all the headlines in the news and remembering some contacts I made at a conference, I became one of those people.

The first experiments I performed were relatively easy, basically mixing things, but they are becoming increasingly difficult. My recent experiments involved recombining plasmids (loops of DNA), cloning antibiotic resistant genes, and PCR (polymerase chain reaction.)

At this point I am doing some higher level cloning procedures for isolation of certain mouse genes—by placing them at random in *E. coli* bacteria and then detecting them after they have been replicated by the *E. coli*. (Don't worry—I'm not in danger of infection—the *E. coli*'s ancestors were resident in the human body but have since been engineered so that they can only survive in laboratory conditions.) The cells that contain the desired gene are then lysed (split open) and the gene extracted. The gene then can be analyzed further. I find these projects exciting. The easiest way to crack the code of life is through decoding DNA. I hope to be able to do that and plan to make this work my career.

I am also attempting to use computers in conjunction with the microbiology procedures. Once the sequence of the DNA is determined, it can be conveniently analyzed and decoded through computers. This unique combination of technology provides many interesting challenges.

However, this can be a very expensive hobby. Enzymes commonly cost \$50 for one microliter—a millionth of a liter. A microcentrifuge (an extremely high speed centrifuge necessary in many procedures) is impossible to find for less than \$1000. The field would be practically impossible for the novice to pursue if it weren't for generous people who are willing to lend a helping hand or the grants for students provided by conscientious corporations. [Ed. note: Last year Casey's primary work was refining and improving "Aerogel," an ultra light substance—also known as "frozen smoke"—which has potential for aerospace and household applications because it is a good insulator. For this work, Casey won not only a 1992 CAG student grant, but also substantial awards presented to him in Chicago and in Washington, D. C. Casey tells me he continues his work on Aerogels in addition to the work he has described in this article.]

Fortunately my parents have always been supportive of my ventures. My father has a background in math and science and was able to help me with my projects. My mom has let me use 1/4 of the freezer, her best tupperware, and a whole room for my projects. I appreciate their commitment to helping me and also appreciate the scholarships I've received from CAG. Thanks for helping me fulfill my dream!



Self-Concept and the Gifted Child

Executive Summary

by Robert D. Hoge and Joseph S. Renzulli

Objectives

Three general issues are addressed in this monograph. First, do gifted and average children differ in their self-concepts? Second, what, if any, are the effects on self-concept of labeling a child as gifted or exceptional? Third, does placing the child in a separate enriched or accelerated classroom have any impact on self-concept?

Examinations of Self-Concept and Giftedness Constructs

The monograph begins with discussions of self-concept and giftedness constructs; we show that there is less than perfect agreement on the way in which they should be defined and measured.

For example, while there is something of a consensus that self-concept refers in very general terms to the image we hold of ourselves, there is considerable disagreement over the precise way in which self-concept should be defined. The major issues concern the way various components of self-concept should be conceptualized and with the way the specific components combine to form a composite construct. The absence of an agreement on the treatment of self-concept is shown to complicate analyses of the relation between giftedness and self-concept.

Complications also exist with respect to the measurement of self-concept. In part, the difficulty arises from disagreements over definition. Different conceptualizations of self-concept imply different measurement tools. This situation creates difficulties in assessing the construct validity of self-concept measures. There also exist problems with the reliability and criterion-related validity of some of self-concept measures. Progress is being made in the refinement of the instruments, an encouraging development from the point of view of establishing a better understanding of the giftedness/self-concept relation.

Problems associated with the definition and measurement of the giftedness construct are also discussed. Alternative conceptualizations of giftedness exist. These are shown to vary

along five dimensions: (a) breadth of the construct; (b) the content of the definition; (c) the level of exceptionality represented in the definition; (d) whether the definition represents a static or dynamic focus, and (e) the precision of the definition. It should be understood that this variability considerably complicates analyses of the relation between giftedness and self-concept. For example, a definition based narrowly on IQ test performance may have very different implications for a child's self-esteem than one based on a broad range of academic aptitudes and achievement levels.

Issues relating to the measurement of giftedness are also discussed. Several points are developed. Considerable variability exists across applied and research settings in the type of measure employed and in the way in which the same measure is sometimes used. Second, a discrepancy often exists between formal or official definitions of giftedness and the operational definition actually employed in a selection situation. Third, problems exist with respect to the reliability of some of the measures, and, in particular, with their construct and criterion-related validity. These problems are also shown to complicate investigations of the links between giftedness and self-esteem.

The Relation Between Giftedness and Self-Concept

Theoretical considerations. A set of hypotheses regarding the link between giftedness and self-concept are developed from various sources.

There are two bases for hypothesizing more positive self-concepts on the part of gifted children. The first rests on the assumption that, to the extent that performance is higher in the gifted, higher self-concepts will ensue. The second consideration derives from the assumption that the act of labeling a child as gifted will contribute positively to their self-esteem.

On the other hand, some reasons exist for hypothesizing that self-esteem in the gifted might be more negative than in less gifted peers. First, under some circumstances, it is likely that the high expectations communicated to the

The work reported herein was supported under the Javits Act Program (Grant No. R206R00001) as administered by the Office of Educational Research and Improvement, U.S. Department of Education. The findings do not reflect the position of the Office of Educational Research and Improvement or the U.S. Department of Education.

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Research-Based Decision Making Series

The National Research Center on the Gifted and Talented

The University of Connecticut
362 Fairfield Road, U-7
Storrs, CT 06269-2007

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by James A. Kulik

gifted child will be translated into failure experiences. The child never quite measures up to the expectations and self-esteem suffers. Second, many exceptional children are cognitively advanced and may be more sensitive to social cues and more analytic about them. This may, under some circumstances, incline children toward a more critical attitude of their abilities and performances. A third basis for predicting lowered self-esteem relates to the social comparison process. We would expect this process to be involved in those cases where children are identified as gifted, removed from the regular classroom, and placed into homogeneous groups of gifted or exceptional children. This might lead to decreased feelings of self-esteem since the child is now exposed to heightened competition.

The research evidence. Four sets of published studies relevant to the hypotheses are reviewed. These involve (a) direct comparisons of gifted and nongifted students; (b) studies exploring moderator variables; (c) studies of the labeling process; and (d) studies of program effects.

The first type of study entails direct comparisons of gifted and nongifted students in terms of self-concept. The 18 studies within this category employed one of three designs. In the first design, children identified as gifted and placed in special classes were compared with more average students in regular classes. The second design involved contrasting children identified as gifted on the basis of standardized test scores with students not meeting the criteria of giftedness. In this case, there are no labelling or special education elements involved. In the third design, the self-esteem scores of students identified as gifted and in special programs were compared with normative scores reported in connection with the self-concept measure employed in the study.

Overall, the results of these studies indicated higher general self-concept scores for the gifted children compared with their nongifted counterparts. Further, two of the three studies focusing on academic self-concept showed higher levels of self-esteem in that area for the gifted pupils. Finally, no evidence exists that social self-esteem is lower in gifted children than more average children; in fact, the single study showing a difference favored the gifted group.

There are, on the other hand, some qualifications developed with respect to these conclusions. These qualifications have to do with the

high level of variability in the results of the studies and with certain methodological weaknesses in the research.

The second set of studies focused on moderator variables; that is, variables that might mediate the relation between giftedness and self-concept. Some research is available for the following variables: gender, level of exceptionality, and level of achievement. Unfortunately, only a small number of studies show variable results, but no firm conclusions were reached regarding the operation of moderators.

The third issue concerned the effects of the labeling process on self-concept. Unfortunately, we found no studies dealing directly with the effects of the gifted label on the child. There is, however, research showing that the labeling of a child as gifted does have a definite impact on the expectations and attitudes held by parents and teachers, and one would expect that this would eventually impact on the child's self-esteem.

The fourth set of studies explored the effects of programming on the self-concept of gifted pupils. Two types of studies are relevant here. The first involved a comparison of gifted children in enrichment programs with gifted children not in special programs, or, alternatively, gifted children in different types of programs. The second examined changes in self-concepts of students before and after entrance to such programs. These studies are potentially useful in providing information about the effects of exposure to special programming on self-esteem. In particular, they provide information regarding the impact of the social comparison process.

Ten studies on program effect are reviewed and are shown to reveal highly variable effects. Thus, in some cases exposing the gifted child to special programming seems to have no effect on self-concept, in other cases it leads to enhanced self-esteem, and in still other cases it has a negative impact. Unfortunately, the design of the studies is not such that one can determine the conditions under which positive, negative, or no effects are obtained.

Conclusions and Guidelines

The following conclusions and guidelines have emerged from a review of the research evidence linking self-concept and gifted constructs. Each conclusion or guideline is followed by a brief discussion of the research-supported rationale.

Conclusion One: The direct comparisons of gifted and nongifted students revealed that the gifted students as a group showed no major deficits in self-esteem.

Discussion: The majority of students seemed to indicate somewhat higher levels of general and academic self-esteem for the exceptional group. These conclusions are, however, qualified by a number of considerations, including: (a) the variable results yielded by the studies; (b) methodological flaws in many of the studies; and (c) a lack of attention to moderator and interacting variables.

Conclusion Two: Some indirect evidence exists that labeling a child gifted would have a positive impact on self-esteem, but direct evidence is lacking.

Discussion: The impact of labeling a child gifted is an important issue, but one that has been virtually ignored in the research literature.

Conclusion Three: There is some support for a social comparison type of process; that is, that moving a child from a regular classroom to a homogeneous, highly gifted group will have a negative impact on self-concept.

Discussion: Research regarding the impact of gifted programming on self-esteem has yielded variable results. The evidence was, however, by no means consistent, and this body of research sometimes displays methodological flaws.

Implications for Research

Many problems exist in this area of research on self-concept and the gifted child. Yet, important issues are being addressed, and some exciting challenges exist with respect to research opportunities. The research methodology in the areas of self-concept and gifted is improving. It is important, however, to build further strength in this area, and we will offer some guidelines.

Guideline One: It is imperative that future researchers pay more careful attention to their treatment of self-concept and giftedness variables.

Discussion: Considerable progress has been made in the development of some of the measures, particularly the Perceived Competence Scale for Children (Harter, 1982, 1985), the Piers-Harris Children's Self-Concept Scale (Piers, 1984), and the Self-Description Questionnaire (Marsh, 1988; Marsh & O'Neill, 1984). Researchers are advised to use one of these standardized instruments and to score them for specific do-

main scores, as well as general self-esteem.

Guideline Two: There is a need for more attention to the definition and measurement of the giftedness construct (Hoge, 1988, 1989; Hoge & Cudmore, 1986; Renzulli, 1978, 1986).

Researchers must be explicit about the definition of giftedness they are employing. There is certainly room for variable types of definitions, but it is imperative that the construct being employed in the study be made explicit and related clearly to the purpose of the research. In addition, the actual selection devices employed should be assessed in terms of their psychometric properties and should be explicitly related to the giftedness construct being measured.

Guideline Three: Future research must attend more closely to experimental design.

Discussion: A major problem with much of the research being reported is that it confounds critical variables. For example, as we have seen, much of the research on program effects confounds three processes: (a) the effects of labeling the child gifted; (b) the effects on the social comparison process of placing the child in a homogeneous group; and (c) the impact of the placement on actual achievement levels.

There are, to be sure, practical and ethical limits to the type of research that can be conducted in this area. For example designs employing random assignment of children to enriched and non-enriched classrooms are probably unacceptable. Still, we are going to have to be more ingenious in our choice of designs and analytic tools if we hope to make real progress in sorting out these issues. We note, as well, that there is room in this process for more qualitative research methodologies.

Guideline Four: There is a need for longitudinal studies in which changes in the relation between giftedness and self-concept can be explored at different age levels.

There are clearly developmental processes at work here (cf. Feldman & Benjamin, 1986), and these should be attended to more closely in research efforts in our field.

Some Implications for Counseling

The results of research reviewed above revealed no drastic problem areas for the gifted group as a whole. In general, their levels of self-esteem appeared no more problematic than those of more average students. This does not mean, however, that attention should not be paid to the special needs of this group. Several considerations lead to this point. First, the

Robert D. Hoge, Ph.D. is at Carleton University, Ottawa, Ontario, Canada. Joseph S. Renzulli, Ed.D. is Professor of Education at The University of Connecticut, Storrs, Connecticut.

majority of the results reviewed in this paper were based on group data. These can be somewhat deceptive, often concealing problems revealed in individual cases. Second, and as we emphasized, the research is limited in some respects and, hence, not a perfect guide to practice. Third, there is ample evidence from clinical sources that exceptional children may be especially vulnerable to certain types of social and emotional problems (cf. McMillan & Loveland, 1984; Schneider, 1987).

Guideline Five: Counseling with gifted and talented students should have a developmental focus.

Discussion: Zaffrann and Colangelo (1979) have presented a useful general model for thinking about the counseling of gifted students. They believe that "counseling with gifted and talented students should take place within a developmental program organized and maintained for these youngsters...A developmental guidance program for gifted and talented youth must be based on the unique needs and concerns of these students" (Zaffrann & Colangelo, 1979, p. 168).

This type of advice is especially relevant when considering the issue of self-esteem. Our earlier discussion indicates that the nature of self-esteem and the processes affecting it change over the childhood and adolescent years. In developing intervention programs it is important to take account of these developmental changes.

Guideline Six: Exceptional children often have especial needs with respect to emotional health and social competence, and that systematic efforts should be made to accommodate these needs.

Discussion: Zaffrann and Colangelo (1979) acknowledge that exceptional children often have special needs with respect to emotional health and social competence, and that systematic efforts be made to accommodate these needs.

Summary Statement

Three broad objectives were represented in this paper. First, we were concerned with explicating the various questions raised regarding the link between giftedness and self-concept. Many discussions of this issue, as well as many of the research activities in the area, are guided by simplistic conceptualizations, and we have endeavored to introduce some conceptual clarity.

Second, we have made an effort to synthesize the research results available on the issues raised. Unfortunately, that synthesis did not yield a great deal in the way of conclusive answers to our questions. Research methodologies were highly variable and, in some cases, flawed, and results tended to be inconsistent. Yet, the review helped to create a foundation upon which to build a sounder body of research.

Finally, specific recommendations for future research and for the counseling of gifted children are offered. The research recommendations focus on the need for (a) more adequate treatments of self-concept and giftedness variables; (b) improved design and analytic procedures; and (c) attention to moderator and interacting variables. The counseling recommendations focus generally on the need for an increased sensitivity to the effects of the gifted label and gifted programming on the self-concept of children.

References

Feldman, D. H., & Benjamin, A. C. (1986). Giftedness as a developmentalist sees it. In R. J. Sternberg & J. E. Davidson (Eds.), *Conceptions of giftedness* (pp. 285-305). Cambridge: University of Cambridge Press.

Harter, S. (1982). The Perceived Competence Scale for Children. *Child Development*, 53, 87-97.

Harter, S. (1985). *Manual for the Self-Perception Profile for Children*. Unpublished Manuscript, University of Denver.

Hoge, R. D. (1988). Issues in the definition and measurement of giftedness construct. *Educational Researcher*, 17, 12-16.

Hoge, R. D. (1989). An examination of the giftedness construct. *Canadian Journal of Education*, 14, 6-17.

Hoge, R. D., & Cudmore, L. (1986). The use of teacher-judgment measures in the identification of gifted pupils. *Teaching and Teacher Education*, 2, 181-196.

Marsh, H. W. (1988). Causal effects of academic self-concept on academic achievement: A reanalysis of Newman (1984). *Journal of Experimental Education*, 56, 100-104.

Marsh, H. W., & O'Neill, R. (1984). Self Description Questionnaire III: The construct validity of multidimensional self-concept ratings by late adolescents. *Journal of Educational Measurement*, 21, 153-174.

McMillan, E., & Loveland, G. (1984). Counseling for the gifted. *Special Education in Canada*, 58, 125-126.

Piers, E. (1984). *Piers-Harris Children's Self-Concept Scale: Revised manual*. Los Angeles: Western Psychological Services.

Renzulli, J. S. (1978). What makes giftedness? Reexamining a definition. *Phi Delta Kappan*, 60, 180-184, 261.

Renzulli, J. S. (1986). The three-ring conception of giftedness: A developmental model for creative productivity. In R. J. Sternberg & J. E. Davidson (Eds.), *Conceptions of Giftedness*.

Schneider, B. H. (1987). *The gifted child in peer group perspective*. New York: Springer-Verlag.

Zaffrann, R. T., & Colangelo, N. (1979). Counseling with gifted and talented students. In J. C. Gowan, J. Khatena, & E. P. Torrance (Eds.), *Educating the ablest* (2nd ed.) (pp. 167-181). Itasca, IL: F. E. Peacock.

junior high school, that child is going to fall into a crack and disappear forever. They begin to be afraid that they're always going to be alone, that they're not going to have any friends, not going to be with any group. They start to feel isolated. They don't have a clear identity.

They must re-prioritize their time and how they use their talents, because now they're beginning to be in charge. They have to figure out how to do things on their own because they're not wanting to ask mom and dad for help.

Not only are they confused adolescents, they're confused about the meaning of giftedness. They say, "nobody ever told us what giftedness is, what that means," but they know they're different. During elementary school they did pretty well. They didn't have to study a lot. Things came pretty easily. Homework went quickly. They may have feelings of inadequacy as they enter the middle school years and things become more difficult for them. They may not have developed the work habits they need to survive in middle school, so they start feeling, "I'm not gifted anymore."

What are some of the needs of the gifted middle school student? First, they need opportunities to develop independence, opportunities that you need to structure for them, with some safeguards, so they're not totally out on their own. They need some concrete experiences for self-direction.

They need some models to emulate. They need to see people besides their parents. I've found with my children, that this was a time where someone else in the extended family or a neighbor or a teacher, became much more important to them than mom and dad. I encouraged that. I encouraged them to spend time with this mentor, whom they have suddenly discovered knows more than mom and dad.

They have a desire to be taken seriously. When they come up with something which they think very seriously about and you see it as funny, it can create some real problems.

They want some predictable physical and temporal space in which to be alone, to have time to be on their own.

A problem may arise when a child comes from an accelerated elementary GATE program, such as self-contained classes, where they've really moved ahead and they have perhaps touched on 7th grade curriculum—they may have learned algebra, heaven forbid, during 6th grade! Often, middle schools are not able to accommodate this, and difficulties arise.

The child has ceased to be a child. I have

saved a cartoon which shows dad and daughter. Some interesting discussion going on. The father looks at her and says, "How do you expect me to parent if you won't child?" This situation usually arises during middle school—you're trying to be the parent and your child is not playing the role properly.

So what do we parents do? We preach. We say, "You should have done this," "It's your responsibility to..." We say these things. An example, "It's your responsibility to remember to take your homework, not mine." What happens to the child? He knows he should have remembered it, but because you're preaching instead of helping him solve the problem, he feels there's a lack of trust.

We probe. We say, "Why did you do that?" And the child's reaction may be to become anxious, withdrawn, or start giving us back half truths because they don't want to be criticized.

We pacify. We say, "Oh cheer up. It can't be that bad." The child comes in totally crushed by something that happened at school and you say it's not so bad. The child feels misunderstood, angry and confused, because to the adolescent it is that bad, it really is *that bad*.

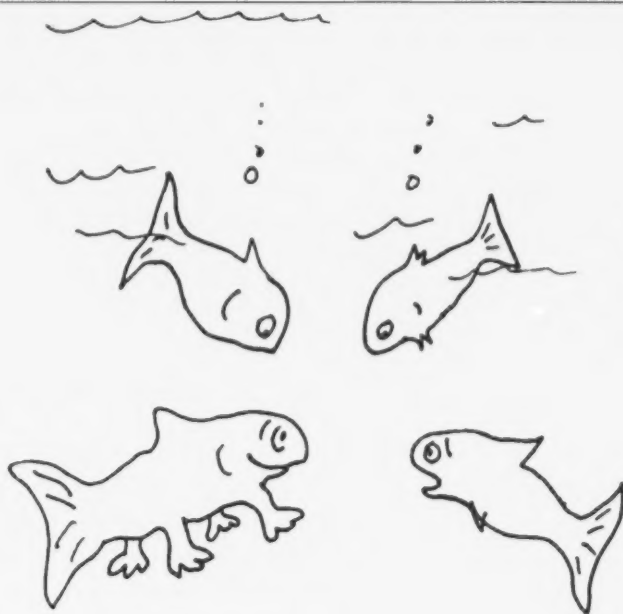
We analyze. We say, "What's wrong with you? You're just tired, you don't really mean that." And when we say these things, we stop the communication. The child thinks, "Why should I try to talk to her? All she tells me is I'm just tired. She doesn't understand what I'm trying to tell her."

So what's to be done? As parents, there are some specific things you can do, and I have some strategies that will help. You need to act as a leader. You still need to set the limits, but you need to negotiate the limits and the responsibilities. One of the things that's always worked well for me is family meetings. It's very simple. You set a 20-minute time slot on a weekly basis when you know everyone can be there. It's not to be missed. Twenty minutes only. You keep an agenda on the refrigerator and everyone can put something on the agenda.

It's a time where you and the child interact as equals, everything has value, everyone can say something and everyone has equal negotiation responsibilities. It's not a time for you to preach, it's not a time for you to announce what you're going to do. It's a time to look at the agenda and say, "Okay, there's a problem here. You put it on the agenda, Mary, tell me more about it." And as a family you negotiate a consequence or a solution.

ON THE LIGHT SIDE

by Jean Watts



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Look, be realistic. You graduated last in the whole school.
If none of us have made it up on shore, how will you manage?

This works really, really well with gifted kids. They like to know they will be listened to. They like to know they can be given credibility and can be given some trust and responsibility in solving problems. The first couple of times you do it you may not get too much on the agenda, and the kids won't say much. But if it continues on a weekly basis, and you show that you do respect their concerns and their suggestions, it will become one of the best communication tools in your family.

Another thing they need is time alone. Lots of times when kids go in their rooms and stay alone, parents get worried, but gifted kids need this time alone. They need time to be with their music, to be with art. They just need time to think. They like space. There may be concern that they're becoming depressed or withdrawn, but gifted kids do need time alone. It's as if they have to put their house in order. They might even want a lock on their door. We went through that at our house. We discussed it at a family meeting and decided that they had the

right to have a lock on their door. There were times when they needed their privacy.

They need to be provided with diverse experiences. It's very important to make these kids self-reliant. When it came to the point where everybody needed a ride somewhere and nobody was driving yet, I spent a lot of hours chauffeuring. I decided a good way to encourage self-reliance was for them to use the public transportation system, in perhaps 6th or 7th grade. Their use of public transportation was one of the things that really helped me to teach my children that they could be in charge. They could get somewhere on their own and get back. It's been one of the best things I did, because when they went off to college, they didn't have cars and they had to know how to get around. I set it up very carefully. If they were going to visit someone in the family on the other side of town, I made sure it was the time of day when there wouldn't be a lot of people and a lot of confusion, like right at 5 o'clock rush hour. I made sure they had money and a phone number so if they did get lost or missed the bus, they didn't get stuck. It worked very well for us.

Another important thing is giving them a chance to do something outside school besides the usual kinds of things kids do—music lessons and sports. Gifted kids frequently need to have a different experience. My son started taking college classes in music at age 12 because the level of music that he needed was not available in his middle school and high school. He received concurrent enrollment credit on his transcript which assisted him to fulfill his graduation requirements quite early. More and more colleges are offering Saturday programs and summer programs in the areas of science and math because they have the facilities. They have the labs. They're encouraging girls.

I recommend an excellent book called *Guiding the Social and Emotional Development of Gifted Youth, A Practical Guide*, by James Delisle. He has six suggestions for parents. Number one is to remember that the real basics go beyond reading, writing and arithmetic. Delisle reminds parents that sometimes it's more important to play in the sand, smell the flowers or talk to other people than to worry about reading, writing and arithmetic. His second rule is that you can be good at something you don't enjoy doing. Number three, it's all right to be good at things that are unpopular with your friends. The kids need to remember that, especially when they're starting to develop deep interests in middle school, because they may not be the

kinds of things that a lot of the other kids are doing. Number four is that life is not a race to see who can get to the end the fastest. We're not going to say, "Finish algebra in three weeks just because you're gifted." That isn't what life is all about. Fifth, you have the ability to ask questions that don't have answers. Gifted kids love to discuss and philosophize and talk about 'what ifs.' "What do you think this ought to be and how do you feel about that?" They need an opportunity to do that. Sometimes as busy parents we might think, "Oh, this is a waste of time. I really would like to get on to something else." Indulge your children with the chance to ask questions that don't have answers. Hopefully they'll find some answers for those questions later on, some questions we need answers for in our society. The last one of Delisle's six realities is that it's never too late to be what you might have been. Research shows that some gifted kids tend to pick what they want to be very early and they don't deviate. But others change their majors in college six or seven times. Either way, it's never too late.

If you feel like you really can't communicate, you're getting really frustrated and you see your child getting quieter and more withdrawn, try writing a letter. Stick it under the door, put it with the laundry, put it in the lunch bag (if you still pack lunches), or mail it with a stamp even though they still live in your house. It's a letter from you to them, and say, "please send me an answer." Wait for them to answer

you. It sounds silly but it works. The written word is sometimes more powerful than anything you can say.

So how do you help adolescents with all of their anxieties, feelings, growing pains and the urge to be independent? You need to listen and be a sounding board for your children. You need to encourage them to communicate with you, whether you have to do it in writing or orally. You need to sit down and go eyeball to eyeball with them. Don't say 'tell me about your day' while you're cooking dinner. Go sit down somewhere and say, "How did it go today, what happened?" Really pay attention to their answers.

Be specific when you answer them. Sometimes they'll ask you a question, and if you're busy, you'll say, "Oh, I don't know about that. Let's talk about it later." That's a real turn-off. Have structured discussions through the family meeting approach. Sometimes you might try a role reversal, letting the children play parents at the family meeting. Let them run the meeting and you be the child and see how it goes. They'll feel very powerful. Involve your younger children too, so you'll have the communication already working when your next child reaches middle school.

Most importantly, practice. Don't just try once, fail and say, "It didn't work, we won't do it." Practice the communication. Practice the family meetings. Parenting a middle school gifted child can be an exciting adventure.

This article is excerpted from a presentation at the CAG Conference in San Jose, March, 1993. Sharon Freitas is the Capitol Region Parent Representative on the CAG Board. Her address is 8820 Elk Grove Blvd., Elk Grove, CA 95624.

Gray

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in her room to keep her from finding pianos elsewhere, for they felt it was a sin for a little girl to have such a passion for mastering the instrument. Although this child had the determination to sneak out her window and escape to the local church where she could practice the organ at night, she was not able to persevere against her parents' will indefinitely. She was ultimately unable to give expression to her gift, and at more than 50 years of age, still suffered the pain of unfulfillment.

This is an extreme example, for these parents exerted a negative, rather than a neutral force on the child and her gift. What effects would a positive force have? In a 1962 study of 100 young concert pianists, Olympic swimmers, tennis players, and research mathematicians, Benjamin S. Bloom identified several conditions which stand apart from the native gifts and appear crucial to producing excellence. Not only did the research subjects demonstrate

enormous potential, but their parents demonstrated extraordinary powers to support their children. They valued their child's gift, and viewed activities in the area of talent as a natural part of life. Very often, the parents were engaged in the activity as well, so the child was able to learn its "language" at an early age. The parents valued the work ethic and transmitted this value to their children, who learned self-discipline. Finally, the parents were willing to devote family resources to gain access to a variety of teachers. (M. Pines, "What Produces Great Skills?")

Parents are ideally placed to fulfill the child's basic needs. If we refer to Maslow's well-known pyramidal hierarchy of human needs, we see that most elemental are the physiological needs, then the need for safety and security, followed by a need for belonging, acceptance and love. Acceptance of our children's gifts enables them; denial disables them. Once an

...the visibly
talented
individual is
made to feel
responsible for
what is
perceived to be
a lack of
talents in the
other person.

individual is accepted and loved, he or she can develop a sense of worth and competence, and is freed to realize his or her potential.

What are some needs that may be unique to gifted individuals? Leta Hollingworth described a number of difficulties very highly gifted children may experience in her 1942 text *Children above 180 IQ* (p. 145). Although few of our children measure at this IQ range, they may share many of these challenges.

Difficulties for the Very Highly Gifted

1. They may experience frustration by conceptualizing moral and ethical problems before they can "solve" them. [I saw this happen when my fourth child, then 5 years old, decided to become a vegetarian because he discovered animals were being killed solely to provide him food. His classmates ridiculed him when he told them that he was helping out the animals hurt by the Exxon Oil spill by refusing to eat the cafeteria's hot dogs. He did not know how to respond to their jeers—especially when they told him cows and pigs weren't hurt in the oil spill.]
2. Gifted children may learn to manipulate adults or lose respect for those who seem less intelligent than they. [I almost hesitate to tell this story: My oldest son and a pair of friends discerned a pattern in the behavior of their least favorite teacher. He would show a movie and then read to them from a library book. This approach was so predictable, and so dull, that after a movie introducing one unit, the boys went to the school library and checked out ALL the copies of the featured book, thus undermining the teacher. He was not fond of them either, and instead of appreciating their inventiveness, remarked that they needed a "kick in the seat of the pants." Obviously a real challenge is finding appropriate and understanding teachers.]
3. The child may have a tendency to argue about what's required; he or she may have difficulty listening to others, or restraining self-expression; he or she may put off routine "drudgery" in order to engage in more stimulating and rewarding projects.
4. The child's versatility and widespread interests can pose a problem if habits of sustained effort and self-discipline are not developed, because projects are engaged in only through the initial excitement period and abandoned when something new catches his or her interest.

5. The characteristic of being capable of self-determination and tending to cherish a sense of control can be a problem. [I call this the "I want to do what I want to do when I want to do it" syndrome.]

Parenting Pointers

If it is a parent's job to build a child's self-concept, by loving and accepting him "warts and all," and the gifted child is sometimes so difficult, how can we do it?

1. Listen to the child's concerns. Help him or her think through ethical problems. Try to find ways he or she CAN have a positive influence and impact.
2. Set an example of showing respect for others, regardless of their apparent IQ. Teach that all people have worth.
3. Model active listening techniques.
4. Help them schedule their lives and learn to establish goals and priorities.
5. Provide opportunities to make choices so the child learns how to handle responsibility. Break chores into small steps which seem more manageable. Be flexible. If the child has a good idea, try it.

Joanne Whitmore, author of *Giftedness, Conflict and Underachievement*, wrote that "Good mental health unquestionably is a prerequisite for self-actualization..." (p. 138.) She lists several factors common to gifted children which make them emotionally vulnerable. They have a tendency toward perfectionism, a trait that can motivate to great achievement or hamper progress. Parents can address this quality in their children and help provide opportunities for children to achieve success in low-risk activities such as crafts, cooking, and non-competitive sports—anything that is fun and "worthwhile." I remember asking my two oldest boys if they wanted to play on a soccer team. They both declined, with my second son saying, "You know me; I'm just not into athletics." I encouraged them to participate and made a bargain with them; if they didn't like soccer after one season, I wouldn't ask them to play again. Perhaps this took some risk out of the opportunity; at least I didn't say they had to become league champions! Ultimately both boys played soccer—and enjoyed it—for more than three seasons.

Another facet of the perfectionism gem is shown when a child who is talented in one or two areas expects or is expected to excel in all academic areas. We need to help the child, and

the teacher, understand that development may not take an even course. Some teachers are very destructive in their comments: "How could you have only gotten 3 right on the spelling test? I thought you were gifted!" A friend of mine called to tell me her son was hiding under the bed before school: he had forgotten his homework and knew the teacher would hate him. My daughter, in the same class, expressed her stress in bad dreams and stomach aches. We resolved this crisis by enlisting the help of the Special Education teacher, a loving, nurturing individual, who volunteered to tutor my daughter after school on spelling and math. This teacher recognized that my daughter learned best in a warm environment and in a kinesthetic mode. Now, three years later, this same daughter is excelling in math and envisions a career in medicine.

Sometimes gifted individuals experience social isolation. Paradoxically, our society values conformity, but also innovation. Anyone very different from the average is made to feel uncomfortable. It is as though success by one person diminished the self-worth of another. One woman remarked to me at a church gathering, "Oh you talented people! You can do everything. All I can do is scrub pots and pans." In instances like this, the visibly talented individual is made to feel responsible for what is perceived to be a lack of talents in the other person. Peers are not the only ones who may feel uncomfortable around persons of talent; authority figures also generate "You are different from me" messages that exclude rather than include the targeted individual. These realities justify the existence of a peer group, where the child (or the adult) is accepted, acknowledged, and appreciated.

Certainly there is more to success than self-esteem. What else would the "Owner's Manual" have us as parents do? Foremost would be the charge to get to know each child as an individual and to be aware of his or her particular strengths. Then, build on those strengths. It is important to remember that talent can't be created; the purveyors of "superbaby" method books seem to overlook this point. Parents shouldn't push their children into activities. They can invite and encourage, but they must be responsive to the children's motivation and drive to pursue an interest. Parents are responsible for initially exposing the child to a variety of opportunities, and for responding to the first signs of talent.

Part of providing a supportive environment is locating appropriate teachers for the gifted. If the child is enrolled in public school, the parent should be involved in school groups, and participate in parent organizations for the gifted. Dr. Feldman observed that teachers were a central part of each child's development. (p. 124) He felt that "more important than being a top-level performer in his or her own right, the teacher should be kind, enthusiastic, encouraging, positive and patient." (p. 145)

Joanne Whitmore lists several characteristics teachers of the gifted should embody. [Perhaps it would be appropriate for parents to establish goals to make these qualities theirs, too.] A teacher who is fully-qualified to teach the gifted is a life-long learner, has superior mental abilities, is a divergent thinker and creative problem solver, is well-educated in the liberal arts, is understanding and empathetic, well-organized, possesses excellent communication skills and enjoys a healthy self-concept. (p. 400) The successful teacher uses a basic approach of motivating achievement through an exciting and rewarding curriculum that also provides for the emotional and social needs of the children.

There are no easy answers to the question of how to raise capable, creative children who will happily make effective use of their talents and skills. Ultimately, we have to rely on loving them, accepting them, providing opportunities, being flexible, and responding to their needs.

For Further Reading

1. Feldman, David H. *Nature's Gambit: Child Prodigies and the Development of Human Potential*. Basic Books, Inc., Pub. New York. 1986.
2. Goertzel, Victor and Mildred G. *Cradles of Eminence*. Little, Brown, and Co. Boston. 1962.
3. Pines, Maya. "What Produces Great Skills? Specific Pattern is Discerned." *Noteworthy Piano News from KJOS*. Summer 1984 (article is copywrited 1983 by N. Y. Times, Co.)
4. Terman, Lewis M. and Oden, Melita H. *The Gifted Group at Mid-Life*. Stanford Univ. Press. Stanford, Ca. 1959.
5. Whitmore, Joanne R. *Giftedness, Conflict and Underachievement*. Allyn and Bacon, Inc. Boston. 1980.

Terrie Gray is the Parent Representative on the CAG Board from the Mount Shasta Region. Her address is 461 Tiger Tail Lane, Paradise, CA 95969.

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TALENT DEVELOPMENT

Talent Development in Education

by John F. Feldhusen

Talents emerge from general ability as a combination of genetic dispositions, home and school experiences, and students' unique interests and learning styles. Gagne (1985) described a general theoretical pattern of talent development in youth, and other researchers (Bloom, 1985; Gagne, 1985; Keating, 1979; MacKinnon, 1978; Tannenbaum, 1983; Taylor, 1978; and Reis & Renzulli, 1986) have clarified the nature and development of talents. We see genetic factors as determining potential strengths and setting limits to the extent of talent development. Those who are likely to go on to high level talent development will often exhibit precocity early in their lives. Abilities, aptitudes, and intelligences emerge as a result of experiences, motivations, and styles. Creative insight skills (Davidson & Sternberg, 1984), a functional knowledge base (Glaser, 1984), and metacognitive creativity skills (Beyer, 1987), provide the final underpinning for the emergence of specific talents (Feldhusen, 1992).

Aside from the philosophical and psychological soundness of the talent conception, identifying and developing talent in all children frees us from the problems of identification of "the gifted few" and possible underrepresentation of special populations as well as the stigmatizing effects of the gifted label. It also forces us instead to: (1) focus our instructional expertise on the search for talent and, (2) on fostering talent in all youth, not just the labelled few. In the process of identifying talent in all children we should also become aware of those who have exceptionally high talent potential. Thus, in a sense we have wedded two programs, gifted education and talent development, into one, more potentially effective and

acceptable, program. Educators currently working in programs for the gifted should have much of the needed expertise to effect the combination, but other staff in schools can also be contributors to the new program.

"Talent development is the 'business' of our field, and we must never lose sight of this goal, regardless of the direction that reform efforts may take." This insightful pronouncement by Renzulli and Reis (1991, p. 26) sets the stage for a major reconceptualization of gifted education and for our efforts to bring underserved populations to gifted education. It is certainly clear that large segments of some minority, economically disadvantaged, and culturally different populations are not represented in programs for the gifted and talented. The current approaches to identification and program services in the United States favor some groups and neglect others. The conception of giftedness used most often in programs for the gifted conceptualizes human abilities as synthesized in a general unitary ability called "intelligence" or "giftedness." The identification process and the program services work well for the favored populations. However, an alternative conception, namely "talents," "aptitudes," or "special intelligences" may serve us better in defining and nurturing high level abilities in both the underserved and the favored populations.

The concept of "aptitude," "talent," or "special intelligence" suggests a more analytical and more diverse view of human abilities, abilities which may be nurtured, and aptitudes which are amenable to development. The concept of giftedness which emerged beginning with the work of Terman (1925) and flour-

Continued on page 35



Talent Identification and Development

John Feldhusen, Guest Editor

To be *gifted* is to know that one is very bright, highly intelligent, or of high ability in general. To be *talented* is to know the specific aptitude(s) or strengths one possesses. While it might be generally motivating to know that one is gifted, it is more valuable to know one's *specific* talents or abilities so that educational experiences can be focused on growth in the talent area(s).

The term *talent* implies both aptitude and interest. Furthermore it clearly denotes abilities that grow and can be nurtured in children. What characterizes generally gifted or specifically talented youth is precocity. That is, they learn more rapidly than other children, especially in their talent domains. Thus, they get more and more ahead of other children and stay ahead if school experiences are at an appropriate level and pace, that is, commensurate with their talent potential.

Many forces work to retard the growth of talented youth and pull them back to normal or average levels of performance. Thus, a great many children are never able to develop their talents fully, and they settle for mediocre achievements. To strive for excellence is to be able to develop one's special talents to the highest level possible.

The articles in this special issue of the Communicator all focus on aspects of talent recognition and development. The lead article which I wrote delineates the general nature of talent identification and development and argues that "talent" is a more useful concept than "gifted" or "giftedness." Joyce VanTassel-Baska focuses her analysis on the development of academic talents with particular attention to the role of curriculum as a vehicle for both identifying and nurturing talent. Gilbert Clark, on the other hand, attends to the recognition and nurturance of talent in art. He argues that students who possess artistic talent need rigorous training in the knowledge, skills, and understandings of the artist. Donna Clasen addresses the problem of finding and nurturing talent among youth from populations that are often underrepresented in gifted programs. She presents a set of eight rules or guidelines for talent development in urban settings.

Joseph Renzulli asserts that schools are and should be centers for talent development. However, he also acknowledges that programs for the gifted are in jeopardy and new directions must be sought. He suggests a set of adaptations of his school-wide enrichment model as an approach to the current crises in gifted education. Finally, Donald Treffinger calls for a bold new reconceptualization of gifted education that seeks to identify gifts and talents in all youth and to link gifted education with the school reform movement.

A complete reexamination of the tenets and bases as well as the language of gifted education is needed. New paradigms must be found, but hopefully our gains over the last twenty years since the Marland report will not be lost. The bottom line is that youth who exhibit special talents have special educational, social, and emotional needs that call for adaptations in school programs as well as home and community services. Hopefully these reports by leaders in gifted education point the way to a reform of gifted education that will go hand in hand with the school reform movement and lead to new school programs that serve the needs of all youth more effectively.

PUBLISHED BY THE CALIFORNIA ASSOCIATION FOR THE GIFTED

Administrative Assistant, Carol Brown Spencer
916/965-0653...FAX 916/965-0654

The CAG Communicator is published five times during the year, in September, November, January, April, and June. Opinions expressed by individual authors do not necessarily represent official positions of the Association. Subscriptions are available to non-members at an annual cost of \$15.00.

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Sandra Kaplan

Political vs Educational Correctness

Being "correct" these days is valued highly. Being "PC" or politically correct is acclaimed by many as an important variable in social etiquette. Can educators and parents be politically correct while being educationally correct?

Today, it is politically correct to support heterogeneity; it always has been educationally correct to support individual differences and the rights of students to be appreciated for their differences.

Today, it is politically correct to identify an at-risk population; it always has been educationally correct to consider every student as potentially at-risk and to structure curriculum and instruction to deter such risks.

Today, it is politically correct to recognize *all* students as gifted or talented; it always has been educationally correct to create an environment to encourage the exhibition of ability, giftedness and outstanding performance.

Today, it is politically correct to believe all students can succeed; it always has been educationally correct to differentiate curriculum so that students' success is commensurate with their abilities and interests.

Today, it is politically correct to recognize diversity in our society; it always has been educationally correct to include a multi-cultural perspective in the curriculum and to develop global awareness for our students.

How does your educational program for the gifted reconcile political and educational correctness?

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CALENDAR

CAG Office Has Moved

With the hiring of Carol Brown Spencer as the new Administrative Assistant for CAG and the retirement of Sharon Mountford, the CAG office has moved from Canoga Park to Mountain View. The new office is set up and functioning. Please send mail to the new address and make a note of the new phone numbers.

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Schools are Places for Talent Development: New Directions for the Schoolwide Enrichment Model¹

by Joseph S. Renzulli

*Problems cannot be solved at the same
level of consciousness that created them!*
Albert Einstein

The Fix We Are In!

The types of programs for the gifted that have existed over the past several decades are in serious jeopardy! Reasons for the decrease in services, as we have come to know them, have been described in detail in a number of articles (Gallagher, 1991; Renzulli and Reis, 1991; Treffinger, 1991; VanTassel-Baska, 1991); but it is worth summarizing, as background for this article, the two major causes of the cutbacks that are taking place across the nation. First, the declining economic health of the country has placed all social, educational, and public service programs in severe competition with one another for scarce dollars. Educational programs for students with superior abilities have always received a low priority in the presence of competition with what are perceived to be more pressing needs of the overall educational system. Traditional justifications for gifted programs based on arguments about "the needs of gifted students," and even arguments with economic overtones ("...the nation's greatest natural resource") simply don't hold much influence at a time when books such as Jonathan Kozol's *Savage Inequalities* (1991) point out in graphic fashion the plight of vast numbers of at-risk students.

Second, numerous school reform initiatives have called into question the practices typically associated with programming for students with high potentials. Ability grouping, advanced classes, and opportunities to pursue advanced content and special interests are viewed as undemocratic by reform advocates who are heavily invested in achieving greater equity for lower achieving students. To give you some idea about the extremes to which ideologies are being carried, one state department of education recently announced that it will withhold state funding (not just G/T funds) from districts that

do not do away with all forms of ability grouping (Schmidt, 1993). Many other states and districts are examining national trends toward total heterogeneous grouping and a standardized curriculum for all students, variously referred to as curriculum frameworks, standards, or outcome based education. Accompanying these ideologies has been a good deal of negative press about special programs for gifted students and the people who support them. Advocates of services for gifted and talented students, even the liberals among us who favor more flexible approaches to talent identification and development, are being accused of taking a stand "against our democratic ideals." Somewhere in all the rhetoric about improving our schools, we seem to have lost sight of an ideal upon which our education system, and indeed, the very foundations of our democracy, are based. Simply stated, this ideal asserts that the uniqueness and individuality of every person should be honored and respected. Translated into educational terms, this ideal requires that learning experiences for all students should be arranged so that whatever paths students travel and whatever distances they travel must be appropriate to their unique abilities, interests, and learning styles. If we do not develop specific techniques for achieving this ideal, our educational system will degenerate into a homogeneous, one-size-fits-all curriculum that continues to drive down the overall performance of our entire school population.

Reexamining The G-Word

Practices that have been a mainstay of many special programs for the gifted are being absorbed into general education by reform models designed to upgrade the performance of all students. This integration of gifted program know-how is viewed by the writer as a favorable development for two reasons. First, the adoption of many special program practices is indicative of the viability and usefulness of both

Joseph Renzulli is professor of Educational Psychology at the University of Connecticut, where he also serves as the Director of the National Research Center on the Gifted and talented. He may be reached at the University of Connecticut 362 Fairfield Road U-7 Storrs, CT 06269-2007.

¹ The work reported herein was supported under the Javits Act Program (Grant No. R206R00001) as administered by the Office of Educational Research and Improvement, U. S. Department of Education. The opinions expressed in this article do not reflect the position or policies of the Office of Educational Research and Improvement or the U. S. Department of Education.

the know-how of our field and the role that specialists can and should play in total school improvement. If we are unwilling to share this know-how and to develop ways of working within the context of the powerful school reform movement, then we will continue to be excluded from the reform conversation, and the positions of specialists will continue to be eliminated. Second, many of the practices being absorbed into general education should be a part of the regular curriculum. I have always maintained that all students should have opportunities to develop higher order thinking skills and to pursue more rigorous content than is typically found in today's "dumbed down" textbooks. I have also argued that we should be using the ways in which students respond to enriched learning experiences as a rationale for providing differentiated learning opportunities, resources, and encouragement for all students. This argument reflects a democratic ideal that accommodates the full range of individual differences in the entire student population, and it opens the door to programming models that will help us to develop the talent potentials of many at-risk students who traditionally have been excluded from admission to special programs for the gifted. In order to operationalize this ideal, we need to "get serious" about the things we have learned during the past few years about both programming models and human potential.

A wide variety of research on human abilities (Bloom, 1985; Gardner, 1983; Renzulli, 1986; Sternberg, 1988) has clearly and unequivocally pointed to justification for much broader conceptions of talent development, conceptions that argue against the restrictive student selection procedures that guided identification procedures in the past. Lay persons and professionals at all levels have begun to question the efficacy of programs that rely on narrow definitions and total reliance on IQ scores and other cognitive ability measures as the primary method for identifying which students can benefit from differentiated services. *Continued support for the entire concept of talent development requires that we apply the more flexible procedures that are part of the know-how of gifted education to general school improvement.* These procedures have been largely restricted to small numbers of

Continued support for the entire concept of talent development requires that we apply the more flexible procedures that are part of the know-how of gifted education to general school improvement.

students by a relatively conservative gifted establishment. Continued support also requires that we pay serious attention to including traditionally under-represented groups and students whose potentials are manifested in other ways in addition to cognitive ability measures. Finally, continued support requires that special opportunities, resources, and encouragement should be directly related to the *behavioral* characteristics that brought individual students to our attention in the first place. Special services should be viewed as opportunities to develop "gifted behaviors" rather than merely find and certify them. In this regard, we should judiciously avoid saying

that a young person is either "gifted" or "not gifted." It is difficult to gain support for talent development when we use as a rationale a statement such as "Elaine is a gifted third grader." It

is precisely this kind of statement that offends many people and raises all of the accusations of elitism that have plagued our field. But note the behavioral orientation when we say: "Elaine is a third grader who reads at the adult level and who has a fascination for biographies about women of scientific accomplishment." Now note the logical and justifiable services provided for Elaine:

1. Under the guidance of her classroom teacher, Elaine was allowed to substitute books in her interest area for the third grade reader. The schoolwide enrichment teaching specialist helped the classroom teacher locate these books, and they were purchased from the enrichment program budget.
2. Elaine was allowed to leave the school two afternoons a month (usually on early dismissal days) to meet with a mentor who is a local journalist specializing in feminine issues. The schoolwide enrichment teaching specialist arranged transportation with the help of the school's parent volunteer group.
3. During time made available through curriculum compacting in her strength areas (i.e., reading, language arts and spelling), the schoolwide enrichment teaching specialist helped Elaine prepare a questionnaire and interview schedule to be used with local women scientists and female science faculty members at a nearby university.

Could even the staunchest anti-gifted proponent argue against the logic or the appropriateness of these services? The classroom teacher was delighted with the services because she was the person who identified Elaine's special ability and interest, she was involved in some of the planning, she had a choice in scheduling Elaine's out-of-class time, and she received help from the resource teacher in locating appropriate books for Elaine. This caused the classroom teacher to view the special program as an extension of the general education program, and she viewed the enrichment specialist as a partner in Elaine's education rather than as a competitor.

Finally, note that the recommended services are far different from the usual practice of taking Elaine and all the other "gifted third graders" off for a few hours a week to practice thinking skills and logic problems, to participate in the ubiquitous mythology or dinosaur unit, or to engage in creative ways of making chocolate fudge! When programs focus on developing the behavioral potential of individuals, or small groups who share a common interest, it is no longer necessary to organize groups merely because they all happen to be third graders. And the role of the resource teacher takes on unique dimensions because it focuses on the development of individual talent potentials. The schoolwide enrichment teaching specialist in this case was truly a resource to Elaine because she did not replicate the role of a regular instructor, and she was a resource to the classroom teacher because she provided specific books, the location and purchase of which the classroom teacher would not ordinarily be able to pursue.

New Directions for the Schoolwide Enrichment Model

The programming model that we have advocated since the early 1970's has always argued for a behavioral definition of giftedness and a greater emphasis on applying gifted program know-how to larger segments of the school population. The present reform initiatives in general education have created an atmosphere in which there is much greater receptivity for more flexible approaches, and accordingly, we have reconfigured the Schoolwide Enrichment Model (SEM) to blend into school improvement activities that are currently taking place throughout the country. Space does not permit a detailed description of the full model; however, the following sections will describe the

school structures upon which we have targeted existing components of the model, and one component (The Total Talent Portfolio) will be described in greater detail for purposes of illustration. A graphic representation of the reconfigured model is presented in Figure 1. The right hand column of this figure lists the school structures targeted for change, and the left hand column lists SEM components.

1. The Regular Curriculum

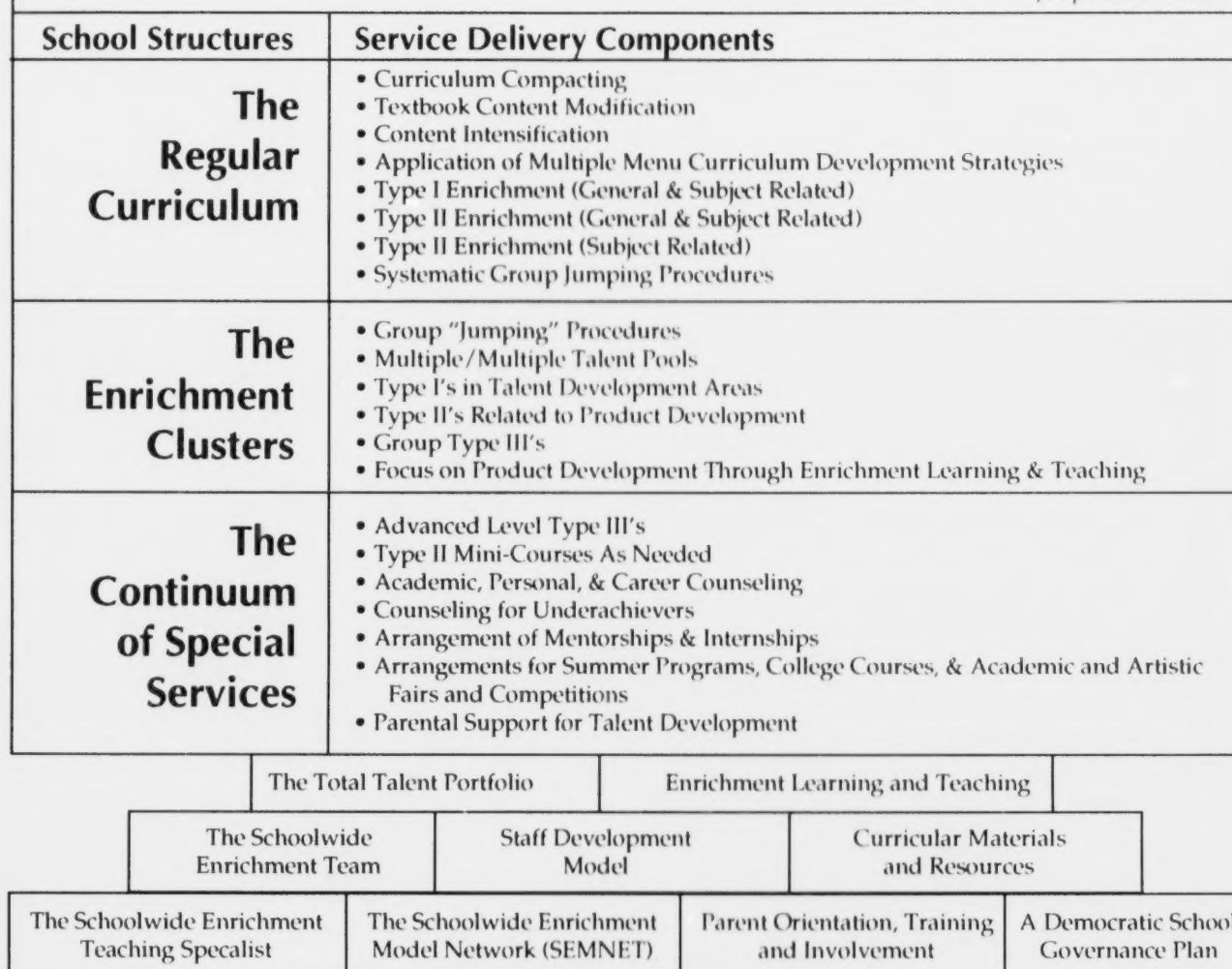
The Regular Curriculum consists of anything and everything that is a part of the predetermined goals, schedules, learning outcomes, and delivery systems of the school. The regular curriculum might be traditional, innovative, or in the process of transition, but its predominant feature is that authoritative forces (i.e., policy makers, school councils, textbook adoption committees, state regulators) have determined that the regular curriculum should be the "centerpiece" of student learning. Our efforts to influence the regular curriculum fall into three categories. First, the challenge level of required material should be differentiated through processes such as curriculum compacting, textbook content modification procedures, and group jumping strategies. Second, systematic content intensification procedures should be used to replace eliminated content with selected, in-depth learning experiences. Third, types of enrichment recommended in the Enrichment Triad Model (Renzulli, 1977a) should selectively be integrated into regular curriculum activities. Although our goal in the SEM is to influence rather than replace the regular curriculum, it is conceivable that the application of certain SEM components and related staff development activities might eventually result in substantial changes in both the content and instructional processes of the entire regular curriculum.

2. The Enrichment Clusters

The enrichment clusters are non-graded groups of students who share common interests, and who come together during specially designated time blocks to pursue these interests. All teachers (including music, art, physical education, etc.) are involved in teaching the clusters; and their involvement in any particular cluster should be based on the same type of interest assessment that is used for students in selecting clusters of choice. Community resource persons should also be invited to participate in the enrichment clusters. The organiza-

The Schoolwide Enrichment Model: Relationship Between Components and Targeted School Structures

Joseph S. Renzulli



Organizational Components

Figure 1

tional pattern for enrichment clusters is called multiple/multiple talent pools, and the model for learning used with enrichment clusters is based on an inductive approach to the pursuit of real-world problems rather than traditional, didactic modes of teaching. This approach, entitled enrichment learning and teaching, is purposely designed to create a learning environment that places a premium on the development of higher order thinking skills and the authentic application of these skills in creative and productive situations. The theory underlying this approach is based on the work of

constructivist theorists such as Jean Piaget and Jerome Bruner, and applications of constructivist theory to classroom practice (e.g., Atkin and Karplus, 1962; Lampert, 1984; Lawson, 1978, and Linn, Chen, and Thier, 1977). Enrichment clusters are excellent vehicles for promoting cooperativeness within the context of real-world problem solving, and they also provide superlative opportunities for promoting self-concept. A major assumption underlying the use of enrichment clusters is that *every child is special if we create conditions in which that child can be a specialist within a speciality group.*

Enrichment clusters allow students and adults who share a common interest and purpose to come together for given periods of time. Like extra-curricular activities and programs such as 4-H and Junior Achievement, the main rationale for participation in one or more clusters is that *students and teachers want to be there*. Selection of an enrichment cluster, however, is not a random or spontaneous process. Interest assessment procedures, examples of previous positive involvement in curricular or non-school activities, and highly positive reactions to purposefully selected interest development activities are all used to help young people and adults make decisions about which enrichment cluster(s) they might like to select for given periods of time.

Enrichment clusters are organized around major disciplines, interdisciplinary themes, or cross-disciplinary topics (e.g., an electronic music group or a theatrical/television production group that includes actors, writers, technical specialists, costume designers, etc.). At the upper grade levels, when interests become more specialized, groups within the general disciplines further subdivide into more focused interest groups. These arrangements are a programmatic application of Gardner's Theory of Multiple Intelligences (Gardner, 1983). The enrichment clusters are not intended to be the total program for talent development in a school, but they are a major vehicle for stimulating interests and developing talent potentials across the entire school population. They are also vehicles for staff development in that they provide teachers an opportunity to participate in enrichment teaching, and subsequently to analyze and compare this type of teaching with traditional methods of instruction. In this regard the model promotes a spill-over effect by encouraging teachers to become better talent scouts and to apply enrichment techniques to regular classroom situations. The use of enrichment clusters is the only major structural change in school organization that this model requires.

3. The Continuum of Special Services

A broad range of special services is the third school structure that is targeted by the model. Although the enrichment clusters and the SEM-based modifications of the regular curriculum provide a broad range of services to meet individual needs, a program for total talent development still requires supplementary services that challenge young people who are capable of working at the highest levels of their

special interest areas. These services, which cannot ordinarily be provided in enrichment clusters or the regular curriculum, typically include: individual or small group counseling, direct assistance in facilitating advanced level work, arranging for mentorships with faculty members or community persons, and making other types of connections between students and out-of-school persons, resources, and agencies. Direct assistance also involves setting up and promoting student, faculty and parental involvement in special programs such as Future Problem Solving, Odyssey of the Mind, the Model United Nations program, and state and national essay, mathematics, and history contests. Another type of direct assistance consists of arranging out-of-school involvement for individual students in summer programs, on-campus courses, special schools, theatrical groups, scientific expeditions, and apprenticeships at places where advanced level learning opportunities are available. Provision of these services is one of the responsibilities of the schoolwide enrichment teaching specialist or an enrichment team of teachers and parents who work together to provide various options for advanced learning.

The Total Talent Portfolio

The case study of Elaine presented above is an example of the approach we are taking in reconfiguring the Schoolwide Enrichment Model. Our purpose in reconfiguring the model is not to counteract or circumvent national trends, but rather to offer some solutions for achieving equity and excellence that are based on know-how that has emerged over the years on enrichment learning and teaching. The basic purpose of these new developments is twofold. First, we are attempting to provide schools with a systematic plan to implement and/or maintain commitments to the development of high levels of talent in young people, regardless of the direction that a school might take so far as its reform agenda is concerned. Second, we want to do everything possible to insure that there is a viable and exciting role within the school for specially trained persons who have strong backgrounds in enrichment learning and teaching. Although we have made some changes in the role that G/T teachers traditionally have played, a major part of their role will remain focused on direct services to students like Elaine who are targeted because of particular behavioral potential(s). But our approach to targeting has

been expanded, and accordingly, we have developed procedures for examining the multiple talent potentials of a broader segment of the entire school population. To achieve this goal, we recommend the use of some existing SEM components with all students. These components include the *Interest-A-Lyzer* (Renzulli, 1977b), performance based assessment, learning styles assessment, and the preparation of a Total Talent Portfolio that is based on the factors presented in Figure 1. This expanded approach to identifying talent potentials is essential if we are to make genuine efforts to include more minorities and other traditionally overlooked students in a plan for *total* talent development.

This approach is consistent with the more flexible conception of *developing* gifts and talents that has been a cornerstone of our work and our concerns for promoting more equity in special programs. It also draws upon some of the new work that has emerged such as Gardner's theory of multiple intelligences. We also recommend and suggest procedures for the use of more thinking skills activities and general enrichment in the regular classroom. In the reconfigured model, the role of the G/T teacher, whom we prefer to call the *schoolwide enrichment teaching specialist*, will consist of both direct services to any student engaged in "high end" learning (e.g., Type III Enrichment, mentorships, advanced Type II mini-courses,

Figure 2

Dimensions of the Total Talent Portfolio					
Joseph S. Renzulli					
Abilities	Interests	Style Preferences			
Maximum Performance Indicators	Interest Areas	Instructional Styles Preferences	Learning Environment Preferences	Thinking Styles Preferences	Product Styles/Formats Preferences
Standardized Tests Teacher-Made Tests Course Grades Teacher Ratings Written Responses Oral Response Self-Selected Products Artistic Products Musical Products Level of Participation Degree of Interaction with Others <i>Ref: General Tests and Measurements Literature</i>	Fine Arts Crafts Literature History Math/Logic Physical Sciences Life Sciences Politics/Judicial system Athletics/ Recreation Marketing/ Business Drama/Dance Musical Performance Musical Composition Management/ Business Photography Film/Video Computers Other (Specify) <i>Ref: Renzulli, 1977b</i>	Recitation & Drill Peer Tutoring Lecture Lecture/Discussion Discussion Guided Independent Study* Learning /Interest Center Simulation, Role Playing, Dramatization, Guided Fantasy Learning Games Replicative Reports or Projects* Investigative Reports or Projects* Unguided Independent Study* Internship* Apprenticeship* *With or without a mentor <i>Ref: Renzulli & Smith, 1978</i>	<i>Inter/Intra Personal</i> •Self-Oriented •Peer-Oriented •Adult-Oriented •Combined <i>Physical</i> •Sound •Heat •Light •Design •Mobility •Time of Day •Food Intake •Seating <i>Ref: Gardner, 1983; Dunn, Dunn, & Price, 1975</i>	Analytic (School Smart) Synthetic/ Creative (Creative, Inventive) Practical/ Contextual (Street Smart) Legislative Executive Judicial <i>Ref: Sternberg, 1984, 1988, 1991</i>	Written Oral Manipulative Discussion Display Dramatization Artistic Graphic Commercial Service <i>Ref: Renzulli & Reis, 1985</i>

out-of-school experiences, etc.) and leadership activities that will infuse the know-how of enrichment learning and teaching techniques into the overall school program. A part of our work in facilitating this process is the preparation of categorical data bases that list a broad array of thinking skills activities and enrichment materials, as well as other data bases on academic

*School improvement must begin by
placing the act of learning at the
center of the change process.*

competitions, publishing opportunities for young people, methodological (How-To) resource books and materials, summer programs, visitation sites, teleconferences, and proven staff development materials.² We have always argued that a large amount of gifted program activities should be made available for all students, and that SEM should serve as a vehicle for sharing the know-how of enrichment learning and teaching with the entire school. The reconfigured model will push this concept even further by enlarging the role of the Schoolwide Enrichment Team and developing genuine partnerships between SEM specialists and teachers and administrators. We still believe, however, that direct services in the form of high level follow-up and appropriate referrals to advanced resources and services are a "life line" for under challenged students with high potentials. For this reason, we will continue to advocate enrichment specialist positions as well as greater use of talent development techniques by the general faculty.

The essence of our new work is the application of SEM know-how to the overall process of school improvement, and the development of some additional know-how that addresses factors related to increasing the challenge level for all students. For example, Curriculum Compacting is a "damage control" process that has been effectively used for high achieving students who are under challenged by the regular curriculum. But a large amount of research has shown that dumbed down textbooks and a focus on minimum outcome based competencies have lowered the achievement levels of

large numbers of the school population. Experience has shown that the billions of dollars spent on compensatory drill and practice approaches to remediation have produced negligible results for disadvantaged students. We need to apply some of our proven techniques for compacting and enrichment to the entire curriculum, and we must replace excessive drill and practice with advanced, in-depth content and thinking skills activities for all students. Accordingly, we have identified techniques and staff development procedures for a more proactive approach to curricular modification which will provide guidelines for enrichment teams that want to surgically remove excess practice material from unchallenging textbooks. It is our hope that experienced G/T teachers who have familiarity with compacting and staff development will provide the technical know-how and leadership to implement this process.

Where Are We Going With SEM?

Three considerations are guiding our work as we go about the task of reconfiguring the Schoolwide Enrichment Model: the central role that the act of learning should play in the process of overall school improvement, the importance of making better use of time, and the need for a systematic approach to school change procedures.

Focus on the Act of Learning

School improvement must begin by placing the *act of learning* at the center of the change process. Organizational and administrative structures such as site based management, school choice, ungraded classes, parent involvement, and extended school days are important considerations, but they do not address *directly* the crucial question of how we can improve the act of learning. An act of learning takes place when three major components interact with one another in such a way as to produce the intellectual or artistic equivalent of spontaneous combustion. These three components are a learner, a teacher, and the material to be learned (i.e., curriculum). Each of these three components, in turn, has its own important subcomponents. For example, when considering the learner we must take into consideration: (1) the abilities and present level of the learner in a

² These data bases and related program development activities will become part of a Schoolwide Enrichment Model Network (SEMNET) that is available to interested persons on a subscription basis. Please write to the author for information about how to gain access to the network.

particular area of study, (2) the learner's interest in the topic and the ways in which we can enhance present interests or develop new interest, and (3) the preferred styles of learning that will improve the learner's motivation to pursue the material that is being studied.

The Importance of Time

Although it would be interesting to speculate about why schools have changed so little over the centuries, at least part of the reason has been our unwillingness to examine critically the issue of time. At some point in history between the time that Socrates met with young people in the marketplace in Athens and the advent of formal schools, the complexities of educating large groups of students gave rise to a formal organizational pattern that has come to be known as "the schedule." The arrival of textbooks with their ramifications for "coverage," and eventually, state regulations requiring prescribed amounts of time for various subjects further locked the school day and week into a formula for orderliness that has remained virtually unchanged since at least the turn of the century. If the ways in which we currently use school time were producing remarkably positive or even adequate results, there might be an argument for maintaining the traditional schedule. But such is not the case.

Although it is acknowledged that schools without schedules would probably be chaotic, the almost universal pattern of school organization that has emerged over the years has contributed to our inability to make even the smallest changes in the overall process of learning. This universal pattern is well known to educators and lay persons alike. The "major" subject matter areas (Reading, Mathematics, Language Arts, and Social Studies) are taught on a regular basis, five days per week. Other subjects (sometimes called "the specials") such as Science, Music, Art, and Physical Education are taught once or twice a week. So accustomed have we become to the rigidity of this schedule that even the slightest hint about possible variations is met with a storm of protest from administrators and teachers. "We don't have time *now* to cover the regular curriculum." "How will we fit in the specials?" "They keep adding new things [Drug Education, Sex Education, etc.] for us to cover." Our uncontested acceptance of the elementary and secondary school schedule causes us to lose sight of the fact that at the college level, where material is ordinarily more advanced and demanding, we routinely drop from a five meet-

ing per week schedule to a three day (and sometimes even two day) per week schedule of class meetings. And our adherence to the more-time-is-better argument fails to take into account research that shows quite the opposite. For example, international comparison studies report that 8 of the 11 nations that surpass U. S. achievement levels in mathematics spend less time on math instruction than do American schools (Jaeger, 1992).

Some of the current reform proposals have indeed recommended changes in the schedule, but most of these proposals suggest *extending* the school day and year. These recommendations ignore the fact that extending school time without primary attention to the *quality* of learning will only increase the number of students who are bored to the point of refusing to learn what is already perceived to be irrelevant material taught by pedantic methods. These methods place primary emphasis on the mostly needless repetition of vast amounts of material that has already been covered. Numerous commentaries on textbooks have summarized research studies about the repetitiveness of a widely acknowledged, "dumbed down" curriculum in our schools. It is this research that has given rise to procedures in the Schoolwide Enrichment Model about specific ways for making modest alterations in the school schedule. The purpose of these alternative options for scheduling is to guarantee that at least some time will be available in each school week during which enrichment learning and teaching will take place. It is further argued that participation in these types of learning situations will provide teachers with experiences that are more valuable to their overall professional development than the thousands of hours they typically spend in traditional educational workshops. Our experience has shown that a small amount of time devoted to learning situations that focus on non-structured enrichment learning and teaching, and small amounts of time devoted to analyzing the circumstances and impact of these situations, has a spill-over effect on all teaching.

A Gentle and Evolutionary (But Realistic) Approach to School Change

The approach to school improvement being recommended in this model is realistic in the sense that it focuses on those aspects of learning and development over which the schools have the most influence, and therefore

the highest probability of achieving success. Schools are being bombarded with proposals for change. These proposals range from total, "systemic reform" to tinkering with bits and pieces of specific subjects and teaching methods. Oftentimes the proposals are little more than lists of intended goals or outcomes, but limited direction is provided about how these outcomes can be achieved; and even less information is provided about the effectiveness of recommended practices in a broad range of field test sites. Even worse are the mixed messages that policy makers and regulators are beaming at schools at an unprecedented rate, messages that are often incompatible with one another. One state, for example, mandated a core curriculum for students, but then evaluated teachers on the basis of generic teaching skills that had nothing to do with the curriculum. Schools are encouraged to raise their standards, and advocates of site-based management encourage teachers to become more active in curriculum development. But these same schools are rated on the basis of test scores tied to lists of state specified, outcome based competencies. A recent study (Madaus, 1992) showed that the most widely used tests measure low level skills and knowledge, and that teachers are under pressure to emphasize this kind of material because it will show up on the tests. The study also reported that teachers and administrators felt the tests forced them to compromise their ideals about good teaching.

In spite of this gloomy scenario, we believe that school improvement can be initiated and built upon through gentle and evolutionary strategies for change. These strategies must first and foremost concentrate on the act of learning as represented by the interactions that take place between and among learners, teachers, and the curriculum. In the early stages of the change process, these strategies should make minimal but specific suggestions for change in existing schedules, textbook usage, and curricular conventions. And these strategies should be based on practices that have already demonstrated favorable results in places where they have been used for reasonable periods of time and with groups from varying ethnic and economic backgrounds. We also believe that the individual school building is the unit-of-change for addressing school improvement, and that effective and lasting change can only occur when it is initiated, nurtured, and monitored from within the school itself. Outside-of-school regulations and remedies have seldom changed

the daily behaviors of students and teachers or dealt effectively with solutions to inside-of-school problems (Barth, 1990, pp. 11-15). A simple but sincere waiver of top-down regulations, a plan that involves consensus and shared decision making on the parts of administrators, parents, and teachers, and incentives for specific contributions to the change process are the starting points and the only "big decisions" policy makers need to make in order to initiate a gentle and evolutionary school improvement process.

The change process recommended in this model begins with an examination of the major factors affecting the quality of learning in a school. These factors exist along a continuum of internal (to the school) to external, and each factor is interdependent with the others. Thus, for example, an internal factor such as the building principal may be externally influenced if the principal is assigned by central administration; and the curriculum may be externally influenced by state regulations or district-wide textbook adoption policies. All of these factors have three salient characteristics. First, they are always present, and regardless of micro or macro change initiatives, they always will be present! Second, each factor exists along a continuum of negative to positive influence on the quality of learning. Third, each factor is almost always going through a process of change, for better or worse. Our goal in the Schoolwide Enrichment Model is not to replace these essential factors, but rather to apply the strategies and services that define the model to the improvement of the respective factors. We view this process as a "cross-cut" approach to school improvement, and the main targets of the change process are those factors that have a direct bearing on the process of learning. And, as has always been the case with the SEM, the reconfigured model is systematic, inexpensive to implement, and practical in a common-sense-sort of-way that makes it appealing to both professionals and lay persons.

In my mind's eye, I view the automobile as a metaphor for our reconfigured SEM model. The school is the automobile (hopefully a Porsche), and the principal is the driver (hopefully bold and daring like Mario Andretti.) The faculty is the engine, loaded with power and constantly being tuned-up to make it more efficient and effective. Members of the Schoolwide Enrichment Team are the spark plugs, igniting the energy with above-and-beyond-the-call-of-duty activities. And the SEM specialist is the

ignition and the distributor, initiating new developments and directing the flow of energy to appropriate places. We have learned a great deal about enrichment learning and teaching during the several years that we have trained personnel and experimented with various components of the model. The atmosphere is ripe for a broader application of the strategies and techniques that have served us well in special programs, and I invite you to join us in this new effort to make all schools laboratories for talent development. I also hope that you will share these thoughts with your school and district leaders so that they will consider supporting your efforts to promote superlative learning in all students.

References

- Atkin, J. M., and Karplus, R. (1962). Discovery or invention. *Science Teacher*, 29, 5.
- Bloom, B.S. (Ed.). (1985). *Developing talent in young people*. New York: Ballantine Books.
- Barth, R. S. (1990). *Improving schools from within*. San Francisco: Jossey - Bass.
- Dunn, R., Dunn, K., & Price, G.E. (1975). *Learning style inventory*. Chappaqua, NY: Rita Dunn & Associates.
- Gallagher, J. J. (1991). Educational reform, values, and gifted students. *Gifted Child Quarterly*, 35, 12-19.
- Gardner, H. (1983). *Frames of mind*. New York: Basic Books.
- Jaeger, R. M. (1992). "World class" standards, choice, and privatization: Weak measurement serving presumptive policy. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, April 20-24, 1992.
- Kozol, J. (1991). *Savage Inequalities: Children in America's Schools*. New York: Crown Publishers.
- Lampert, M. (1984). Thinking about teaching and teaching about thinking. *Journal of Curriculum Studies*, 16.
- Lawson, A. E., (1978). The development and validation of a classroom test of formal reasoning. *Journal of Research on Science Teaching*, 15.
- Linn, M., Chen, B., & Thier, H. (1977). Teaching children to control variables: Investigation of a free choice environment. *Journal of Research on Science Teaching*, 14.
- Madaus, G. F. (1992). *The influence of testing on teaching math and science in grades 4-12*. Boston College: Center for the Study of Testing, Evaluation, and Educational Policy.
- Renzulli, J.S. (1977a). *The enrichment triad model: A guide for developing defensible programs for the gifted*. Mansfield Center, CT: Creative Learning Press.
- Renzulli, J.S. (1977b). *The interest-a-lyzer*. Mansfield Center, CT: Creative Learning Press.
- Renzulli, J.S. (1978). What makes giftedness? Re-examining a definition. *Phi Delta Kappan*, 60, 180-184, 261.
- Renzulli, J. S. (1986). The three-ring conception of giftedness: A developmental model for creative productivity. In Sternberg, R.J. & Davidson, J. E. (Eds.), *Conceptions of Giftedness* (pp. 332-357). New York: Cambridge University Press.
- Renzulli, J.S., & Smith, L. H. (1978). *The learning style inventory: A measure of student preference for instructional techniques*. Mansfield Center, CT: Creative Learning Press.
- Renzulli, J.S., & Reis, S. M. (1985). The reform movement and the quiet crisis in gifted education. *Gifted Child Quarterly*, 35, 26-35.
- Schmidt, P. (1992). Massachusetts leads mounting charge against ability grouping. *Education Week*, 12(16), 1, 22-24.
- Sternberg, R.J. (1984). Toward a triarchic theory of human intelligence. *Behavioral and Brain Sciences* 7(2), 269-316.
- Sternberg, R.J. (1988). Mental self-government: A theory of intellectual styles and their development. *Human Development*, 31, 197-224.
- Sternberg, R.J., & Lubart, T.I. (1991). An investment theory of creativity and its development. *Human Development*, 34, 1-31.
- Treffinger, D. J. (1991). School reform and gifted education—opportunities and issues. *Gifted Child Quarterly*, 35, 6-11.
- Van Tassel-Baska, J. (1991). Gifted education in the balance: Building relationships with general education. *Gifted Child Quarterly*, 35, 20-25.

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See page 39.

The Development of Academic Talent

by Joyce VanTassel-Baska

What do we know about the development of academic talent by studying adults who have been academically prolific and proficient? We know that key influences, both external and internal, have brought them to high levels of accomplishment. Bloom (1985), for example, has chronicled the lives of 35 eminent individuals, including primarily those successful in academic areas and found the importance of several variables, initially a nurturing and supportive family, the right teacher at the right time, opportunity to fall in love with a talent area, and competition after the age of ten in order to develop to the appropriate level standard in the talent field. Feldman (1986) views talent development from the prospective angle of prodigies and sees other processes at work, notably early exposure and opportunity to develop in a given field that is socially accepted and available, a support network including parents, peers, teachers, and mentors that encourage the prodigy in the talent area, and an outlet for the talent through publication, performance, or exhibition. Moreover, the internal characteristics of commitment to hard work, perseverance, and the need to create for both prodigies and successful adults form a valuable part of the talent development puzzle. How people develop talent has often then been credited to a combination of influences related to home, schooling and special training, and personality variables that facilitate the process (VanTassel-Baska and Olszewski-Kubilius, 1989).

The development of academic talent as it is explored through a programmatic lens takes on another orientation, primarily one that seeks to develop appropriate programs based on an individual's talent potential demonstrated at a given period of development. Such programs in our schools at elementary, secondary, and post secondary levels have been developed using two general approaches. One approach has been to identify talent and provide "optimal match" experiences to nurture it through multiple means that include advanced curriculum, placement in university-based settings, and mentoring. This approach has been institutionalized nationally through the academic talent search model, developed by Stanley and his

colleagues in the middle 1970's.

The second approach to talent development lies in providing curriculum for all students at appropriate levels of challenge so that talent may be discerned and encouraged from a broader range of students in the classroom. This idea, initially advocated by Passow (1955), has been recently popularized by Gardner (1984) and others promoting the application of his multiple intelligences theory in regular classrooms. Another manifestation of this approach has been explored through two recent national curriculum projects in science and language arts, developed to set curriculum standards at world class levels and to demonstrate alignment with the new curriculum development paradigm (VanTassel-Baska, in press). A description of both the talent search approach and the classroom-based curriculum approach used in these national projects follows with a brief comparison of the benefits of each.

Julian Stanley's founding of the Study of Mathematically Precocious Youth (SMPY) in 1971 and the subsequent development of the national talent searches signaled a key strategy for talent development in the areas of identification, programming, and curriculum and instruction (Stanley, Keating, & Fox, 1974).

Identification

The development of the talent search identification model itself was the catalyst for the approach. The simple but elegant idea was to administer a more difficult test, one normed on older children, to a younger but highly able group (top 2 to 5% on standardized achievement tests, such as the Iowa Test of Basic Skills), specifically, the College Board Scholastic Aptitude Test (SAT), to find precocious seventh/eighth grade students. The efficiency of this approach is now legendary. More than 140,000 students at 6th, 7th, and 8th grade levels are annually tested through this procedure, both nationally and internationally, through university-based programs at Hopkins, Duke, Northwestern, Arizona State, Iowa State, and Denver universities as well as elsewhere. Talent searches for 5th graders and even younger students using alternative measures off-level currently identify over 10,000 students annually as well.

Joyce Van Tassel-Baska is
the Jody and Layton
Smith Professor of
Education at the College
of William and Mary.
She may be reached at the
Center for Gifted
Education,
College of William and
Mary,
232 Jamestown Rd.
Williamsburg, VA 23185

Through this process, information becomes available for talent to be differentiated by degree and type (verbal, math, or both).

More specifically, what is a talent search? The talent search model employs a two-step testing protocol. At step one, all students who are scoring in the top few percentiles on their in-grade standardized achievement test battery, in mathematical or verbal areas or overall, are searched for. At step two, this academically able population is administered the SAT, a test designed for above average high school students. This results in a wide dispersion of scores on the SAT, such that there is virtually no ceiling effect for the talented youth tested. Consequently, educators can better discern the potential of these junior high age students at this critical stage of development in key academic areas (verbal and math). Furthermore, because these younger students usually have not had advanced course work in mathematics or the verbal areas, the scores are more representative of their reasoning power than achievement (Benbow, 1991; Benbow & Stanley, 1983).

What important implications does aptitude testing using the SAT have for gifted education identification policies? They are manifold. The identification principles in the talent search model have been employed primarily within school districts to identify those students most in need of a differentiated program, namely the highly gifted. However two specific principles embodied in the talent search model have had a powerful effect on local gifted education practice.

One of these is the principle of above-level testing (Stanley, 1990). The talent search model has demonstrated that true potential for specific academic work in mathematics and verbal areas can be discerned better by administering an above-level test, standardized on older populations, than by arbitrarily using cutoff points within a narrow band of ability on in-grade measures, calling those above the cut-off "gifted" and those below "not gifted." Because scores in the top range are difficult to interpret and cannot be differentiated, such cutoffs at the highest ranged produced many false positives and false negatives. Most serious in this regard were the false negatives—the many students who could have performed well on a second-level testing have been eliminated from further consideration through a faulty screening mechanism. That is, they were prevented from showing their true capabilities on a more difficult measure. Local districts now work to apply this

principle of above-level testing in their identification practices to avoid such problems.

A second principle of the talent search identification model that has had significant impact on local educational practice is the testing of specific areas of aptitude rather than tapping only global intelligence. Indeed, in support of this practice, current theoretical work in gifted education suggests a conception of multiple intelligences (Gardner, 1984) displayed in domain-specific contexts (Feldman, 1980). Moreover, predictive validity studies have demonstrated the effectiveness of the SAT in finding students who can profit from advanced course work in specific aptitude areas (Benbow, 1992; Keating, 1976; Stanley & Benbow, 1981; VanTassel-Baska, 1983).

But even if theory and research were not supportive of SMPY's innovations in regards to identification, the talent search approach still represents a very practical course for local districts who program for gifted learners within a limited time frame, and therefore, frequently are not able to meet all of the educational needs of this population. Furthermore, targeting individual aptitude areas has political benefits—it allows for a larger number of students to be identified and served, and thereby dispels the notion that the gifted program is serving only high IQ students. Even diversification of program options based on aptitude differences is possible in higher socio-economic suburban school districts where many bright students may be found. This allows for differentiated programming even among the gifted. The benefits can be made equally apparent for the other end of the SES continuum. Approximately 14% of talent search students identified annually through either mathematical or verbal scores in the Midwest, for example, are from low SES backgrounds (VanTassel-Baska & Chepko-Sade, 1985).

Finally, the talent search provides a systematic approach to identification that recognized four distinct aspects of the process: screening, identification, program planning, and validation of selection criteria. This systematic work has positively impacted identification policy, at state and local levels at all stages of student development.

Programming

The talent search concept also has deeply affected our ideas about appropriate programming for gifted and talented learners. If students are verbally able, they are best nurtured

in that capacity. That is, they need high-powered verbal programs that test student limits. Conversely, if students are mathematically precocious, a program should be geared to address that strength directly. The true beauty of aptitude testing, such as through the talent search, is that it provides administrators with important diagnostic information for curriculum planning. One could even argue that a cursory content analysis of the test would yield curricular inferences that might be translated into classroom instruction. Based on the type of items contained in the SAT-V, for example, one could begin to develop a strong verbal arts curriculum that focused on critical reading, deductive reasoning, vocabulary development, and use of analogies, all valid curriculum emphases within a rigorous English program.

The summer programs associated with each talent search have demonstrated the effectiveness of matching talent systematically to a core curriculum offering. In such programs, students with high math talent, for example, are given the opportunity to choose from developmentally appropriate course work in math and the sciences. Students have consistently performed very well in such course work which usually comprises three weeks of instruction totalling 75-99 hours of classroom time; at the end of the course they have scored at or above the mean for college-bound high school seniors on the College Board Achievement Test in the appropriate subject area (Stanley & Stanley, 1986). Data from three consecutive years of the Northwestern University summer programs illustrate well the utility of this "matching" phenomenon. In both aptitude and achievement testing situations, junior high age students, with three weeks of intensive instruction, consistently have performed at levels comparable to students four to six years older. (VanTassel-Baska & Strykowski, 1986).

Beyond issues of optimal match by content area, lie other important considerations for programming alternatives. The talent search model has demonstrated two important general programming principles regarding the range of abilities tapped through SAT testing. First, the more gifted the student, the more there is a need for intensification of services such as the compressed summer programs, correspondence study, or mentorships. Second, the more gifted the student, the more the need for the extension of services—providing an array of options that are simultaneously accelerated, enriched, and personalized. Thus, treatment of students by

level of aptitude has provided important insights for program planning in gifted education.

If there is but one approach to programming that can be considered to be the essence of the talent search model, it is acceleration. Indeed, it might even be said that SMPY single-handedly revived this time-honored practice. In the 1970's acceleration was rarely used, now it is used more widely but still not as much as might be desirable.

Reviews of the literature on acceleration have appeared with some regularity over the last 25 years (Benbow, 1991; Daurio, 1979; Gallagher, 1969; Kulik & Kulik, 1984; Reynolds, Birch & Tuseth, 1962; VanTassel-Baska, 1986), and each review has carefully noted the overall positive impacts of acceleration on gifted individuals at various stages in the life span. Recent studies, moreover, continue to show positive results in cognitive development from acceleration and no negative effects in social emotional development. For example, researchers have reported no harmful effects of various forms of acceleration, including grade skipping and taking of advanced courses (Brody & Benbow, 1987; Swiatek & Benbow, 1991). Accelerated students generally earn more overall honors and attend more prestigious colleges, with the best predictor of college achievement being early and continued taking Advanced Placement (AP) courses. The latter suggest that advanced and challenging work on an on-going basis is a powerful instigator to achievement at later levels.

Curriculum and Instruction

The talent search concept has done more than affect identification, programming, and accelerative practices, however. It also has had an important impact on practices in the area of curriculum and instruction. The renewed emphasis on accelerating traditional content, was accompanied by a resurgence of interest in subjects that had been dropped from school curricula or disregarded in favor of more modern options. Such subjects were the classical languages, such as Latin and Greek, philosophy, German, and rhetoric. There also developed an interest in more rigorous aspects of accepted courses, such as in English, literary analysis, and expository writing, rather than emphasis on more creative forms of expression. The resurgence of such curriculum options has created new appreciation for serious study of such subjects by students even prior to high school.

Furthermore, use of diagnostic-prescriptive approaches to ensure instructional progress at an appropriate rate became a staple of well-run, fast paced programs for highly talented students. Also heralded as a technique to counter remediation and loss of motivation of the gifted, these procedures became fundamental to modifying instruction for them. The teachers of the resulting fast-paced classes became facilitators of small group and individual learning, as well as the providers of direct instruction. Frequently instruction in as many as three courses in mathematics, for example, would be taking place in the same classroom—thus highlighting the individualized nature of the instructional process and the wide range of abilities even among the highly gifted.

Finally, the talent search approach encourages the development of curriculum in the core disciplines. Advanced placement coursework was restored as a positive offering for the gifted, which provided many key features of excellent curriculum; many school-based programs for the gifted began to modify traditional content rather than develop curriculum outside of its boundaries.

Impact on Higher Education

The talent search concept has also impacted greatly on the landscape of higher education as well. Six university centers have developed at key institutions as a direct result of the model. Each of these centers provides a broad-based set of services: from the administration of SAT testing for thousands of junior high school age students, to the offering of precollegiate learner programs during the academic year and in the summer, and to research and development initiatives that provide a greater base of understanding gifted students, their families, and the institutions with which they interact. Beyond these centers, a proliferation of precollegiate learner programs have developed at hundreds of other campuses, sponsored as a result of the talent search model. In the Midwest, for example, when the talent search began, there were only a handful of university-based programs for these students. Within one year, there were 24; and by 1987 there were 66. Today there are approximately 80 institutions of higher education providing programming in the eight-state region served by the Midwest Talent Search.

Clearly there is an element of self interest for these institutions; the recruitment of high level talent. However, the direct benefits to students as a result of these programs is enor-

mous. For many it becomes a way: 1) to earn advanced high school and even college credit in an economical manner, 2) to associate for the first time with an equally able peer group, 3) to develop the "habits of mind" associated with serious study on a college campus, and 4) to gain a sense of academic competence through receiving a worthy challenge to learn more difficult material. Equally important are the personal gains in the area of social and emotional development that these students experience.

Curriculum Based Models

The two national curriculum projects which were developed with an understanding of appropriate level curriculum for gifted students are also being used with a broader range of students and illustrate the more curriculum-based approach to talent development. These projects also are based on key features of the new curriculum reform model. Following are some of the features of this model.

Curriculum must be meaning-oriented for the learner. It must emphasize depth over breadth, concepts over fact, and be grounded in real world issues and problems that students of today care about or need to care about. For instance, what role does scientific investigation play in deciding what to do about an overturned truck on the highway carrying dangerous chemicals? Such everyday occurrences become the basis for meaningful science instruction.

Curriculum must engage students in thinking. Such a curriculum must treat thinking skills as integral to all content areas and provide students opportunities to demonstrate their understanding of these areas through strategies like concept mapping and using higher order thinking skills within existing subject matter.

Curriculum must stress intra and inter disciplinary connections. There exists a need to break down the boundaries between areas of learning so that students can participate in real world learning as adults do. One way to do this is to use overarching concepts as the organizer for making connections. Thus the concept of systems in science can have applicability to cells, ecology, and machines as well as to cities and economics.

Curriculum must teach metacognition. Not only do students need to learn certain ideas about the world, they also need to understand how to think about their learning processes. By being aware of planning, monitoring, and as-

sessing their own learning, students can enhance their use of time, resources, and energy to focus on efficient and effective study habits.

Curriculum must cultivate student habits of mind. Education must develop students who think like professionals in various fields and exhibit their predispositions and attitudes as well. Fostering in students the curiosity of the scientist, the commitment of the engineer, and the creativity of the writer is a part of world class education.

Curriculum must be rooted in multiculturalism/globalism. It must recognize that America is not the center of the universe, that other countries and cultures have made significant contributions to the progress of humankind in many areas. Moreover, curriculum should reflect in an equitable way the contributions of all minority groups comprising America today through activities, strategies, and materials.

Curriculum must promote active learning and problem-solving. As such, curriculum puts students in charge of their own learning—finding out what they know, what they don't know, and what they need to know. The role of the teacher in such a model is as metacognitive coach, assisting the learner in structuring the problem, suggesting resources to explore, and encouraging the learner to continue the quest.

Curriculum must be technology-relevant. It should actively encourage students to use various new technologies as tools for the learning process. From doing library research via CD-Rom to composing at the word processor, students need to see the utility in accessing technology. Moreover, the proliferation of software allows any subject to be enhanced while E-mail encourages student communication regularly.

Curriculum must demonstrate learner outcomes of significance. As a result of student learning in any domain, it is reasonable to expect evidence of what has been learned. In order to assess adequately that, appropriate outcomes need to be identified at the beginning of a learning segment. These outcomes must be broad-based, conceptual, and relevant to performance standards.

Curriculum must be assessed authentically. We must test students on what we teach them so that our assessment results can be interpreted meaningfully in the educational context. Au-

thentic approaches currently recommended include performance assessment, portfolios, enhanced multiple choice questions, and open-ended questions, all with an eye to tapping into what students have learned as a direct result of teaching.

These principles of the new curriculum emphasis were incorporated into both the science and the language arts projects. Overall emphases of the projects, however, were to develop and articulate meaningful concepts, to develop a curriculum framework, and to develop and pilot test exemplary units of study.

The development of meaningful concepts

Each of the projects emphasized the importance of a key concept in the organization of curriculum activities. A series of concept papers that describe a number of broad, overarching, scientifically grounded concepts common to many branches of science were developed for the science project, for example. They were chosen with reference to the concepts selected by Rutherford and Ahlgren in *Science for All Americans* (1989), those adopted by the California State Board of Education (1990), and those selected by Judson for his book *Search for Solutions* (1980). Additional criteria applied to selecting the concepts in this project were: 1) ease of applicability to all science areas, 2) number of valid connections to non-science domains of inquiry, and 3) concepts able to demonstrate content manifestations at the unit level of analysis.

Of all the concepts referred to in other works, six were chosen for explication in the project:

Curriculum ...must recognize that
America is not the center of the
universe, that other countries and
cultures have made significant
contributions to the progress of
humankind in many areas

scale, models, change,
systems, evolution,
and reductionism. In
addition, during the
course of the project, a
general description of
the scientific process
that would be useful
for teachers to follow
was developed along

with a description of useful ways to incorporate laboratory work for high ability learners. Finally, an applications paper containing suggestions for implementation was developed for teacher use in teaching the specific scientific concepts.

In the National Language Arts Curriculum Project, the papers developed focused on the key strands of learning in the language arts, specifically: a) language, b) writing, c) oral

communication, d) literacy, e) a general paper on developing curriculum in the language arts, and f) a paper on the concept of change which was used as a conceptual organizer for individual unit development.

The overall purpose of articulating specific concepts was to aid teachers in understanding the key components and generalizations that are critical to specific concepts or areas of learning as well as to see ways these concepts can be applied to high ability students' learning in the classroom. Moreover, by providing a rich bibliography of further readings on each concept, teachers were encouraged to engage in the first step of the curricular and instructional process: learning as much as possible about what they are expected to teach.

The development of a curriculum framework

In the K-8 science curriculum project, a framework was developed that selected the concept of "systems" and developed it systematically from generalizations to learner outcomes to content applications to interdisciplinary applications at the specific grade levels of K-2, 3-5, and 6-8. The framework provided an organizing structure for the development of teacher units around the concept of systems. Major generalizations made about systems were:

- a. Systems have identifiable elements.
- b. Systems have definable boundaries.
- c. Most systems receive input in the form of material or information from outside their boundaries and generate output to the world outside their boundaries.
- d. The interactions of a system's elements with each other and their response to input from outside the system combine to determine the overall nature and behavior of the system.

These generalizations were then translated into learner outcomes. An example of this process at grades 3-5 is:

Students will be able to:

- Analyze important interactions among system elements that give rise to overall system behavior.
- Describe input into the system and evaluate its effects.
- Describe output from the system and analyze its effects/contributions.
- Use elements, boundaries, input, output, and interactions to represent a system.
- Describe the interdependence of elements, boundaries, input, and output.

- Predict perturbations in others parts of the system when changes are made to a single system component.
- Students can predict first- and second-order consequences of modifying the system.
- Use knowledge of a system under study to analyze a new system.

The same process was followed to teach an understanding of scientific process. The elements of the scientific process were defined as:

- a. Learn a great deal about your field.
- b. Think of a good (interesting, important, and tractable) problem.
- c. Decide which experiments/observations/calculations would contribute to a solution of the problem.
- d. Perform the experiments/observations/calculations.
- e. Decide whether the results really do contribute to a better understanding of the problem. If they don't, return to either step 2 (if you're very discouraged) or step 3. If they do, go to step 6.
- f. Communicate your results to as many people as possible. If they're patentable, tell your lawyer before you tell anyone else, and write a patent application or two. Publish them in a scientific journal; go to conferences and talk about them; tell all of your friends.

This description of the scientific process was then translated into generic learner outcomes.

Students will be able to:

- Explore a scientific area.
- Identify meaningful problem for investigation
- State an hypothesis.
- Work through a preplanned experiment or demonstration or aid in the development of an experiment.
- Make appropriate observations.
- Create a simple graph or chart. Label diagrams appropriately.
- Record data in appropriate format
- Analyze experimental data such as data tables and graphs.
- Perform appropriate calculations by hand.
- Evaluate experiment results in light of the original problem.
- Make predictions about similar problems.
- Communicate using posters, oral communication, and brief lab reports.

In language arts, the curriculum framework was developed with a set of generalizations about "change" forming the basis for developing learner outcomes. Also fundamental

to the language arts curriculum framework was a set of process outcomes, derived from using a reasoning model to undergird all elements of the project to ensure higher order thinking (Paul, 1992). Specific content outcomes derived from the topics papers were developed for each of the four strands of the language arts. Thus the framework stressed concept, process, and content outcomes for high ability learners at K-8 levels.

The development of model units

A set of exemplary curriculum units were developed for primary, intermediate, and middle school levels in both science and language arts. These units were generated from

each project's selected concept either of "systems" or "change." The units used the curriculum framework as a basis for development and were evaluated according to the project criteria for exemplary curriculum materials. A sample description of a unit from each project is shown in Figure 1 and 2. These highlights the relationship of the work of the unit to the concept under study and learner outcomes delineated in the curriculum frameworks.

Comparison of Approaches

While it might be argued that one of these approaches is more appropriate than the other in certain educational contexts, it appears that each has a place in the process of talent development in schools. While the talent search approach ensures that already emergent high level talent can be identified and nurtured in specialized ways, the curriculum-based approach ensures that a broader range of students are not overlooked and have equal access to high-powered educational opportunities in a supportive context. If talent development approaches are embedded in all classroom curriculum as advocated by Gardner (1984), then a broader concept of talent becomes manifest in schooling while the talent search is limited to develop talent primarily in the traditional areas of aptitude. Developing new curriculum, however, is time-consuming, frequently idiosyncratic, and woefully lacking in evidence of effectiveness with learners. The talent search approach, on the other hand, offers an economical and efficient approach to nurturance through existing resources.

The talent search approach has amassed evidence of effectiveness over the past 15 years; newer curriculum-based approaches will need more time to demonstrate their worth, although impact studies are currently underway on new curriculum in both science and language arts. It is important to note that each of these approaches to talent development is geared to some different type and degree of talent. Students who profit from the talent search model already have demonstrated academic achievement at a high level; whereas, curriculum-based approaches target frequently overlooked learners through the use of motivating and engaging activities geared to capture their interest and hopefully expand their intellect. These activities may not be as advanced academically as those offered through talent search programs, yet they do represent a broader spectrum of academic enrichment.

Sample Science Unit

Small Ecosystems: Planet X

"Planet X" was developed to give second grade high ability students the opportunity to explore the concept of 'systems' through the particular study of a model ecosystem. This unit poses a problem for the students to resolve which will enable them to approach the ecosystem study through the eyes of apprentice scientists. In order to resolve the problem, students will have to build a model ecosystem and understand the global systems (weather, planetary) which are the bases for the model. The problem gives the students a real issue of significance to solve which serves as a vehicle for student involvement and enables them to see the complexity of one system in relation to the systems it depends upon.

Figure 1

Sample Language Arts Unit

People and Change

"People and Change" was developed to give fifth grade high ability students the opportunity to explore the concept of change through the particular study of key pieces of literature in which characters change in significant ways as a result of internal and external events. The unit encourages students to explore poetry, short stories, and novels in their quest to understand character and cultural change. Reasoning skills are taught through literary analysis, writing persuasive essays, and language study. Research on an issue of significance illustrating the change process at work is also featured.

Figure 2

Conclusion

In conclusion, academic talent development stands at a threshold of accommodating two strong approaches—one the traditional talent search model that finds and nurtures high level academic talent as early as fifth grade and the other a more curriculum-based approach that seeks to upgrade the level of curriculum for all learners and reveal latent talent in a variety of academic and non-academic areas. It is my contention that both of these models of talent development must be employed by schools to ensure that no student is overlooked or underserved in a particular area of talent. By including a combination of models, we move closer to that ideal.

References

- Benbow, C.P. (1992). Meeting the needs of gifted students through use of acceleration. In M. Wang, M. Reynolds, and H. Walberg (Eds.), *Handbook of in special education: research and practice* (pp. 23-36). NY: Pergamon Press.
- Benbow, C.P., & Stanley, J.C. (Eds.) (1983). *Academic precocity: aspects of its development*. Baltimore, MD: John Hopkins University Press.
- Bloom, B. (1985). *Developing talent in young people*. NY: Ballantine Books.
- Brody, L.E., and Benbow, C.P. (1987). Accelerative strategies: How effective are they for the gifted? *Gifted Child Quarterly*, 3 (3), 105-110.
- Daurio, S.P. (1979). Educational enrichment versus acceleration: A review of the literature. *Educating the gifted: Acceleration and enrichment*, pp. 13-53. W. C. George, S.J. Cohn, and J.C. Stanley (Eds.). Baltimore, MD: The John Hopkins University Press.
- Feldman, D.H. (1986). *Nature's gambit*. NY: Basic Books.
- Feldman, D.H. (1980). *Beyond Universals in Cognitive Development*. Norwood, NJ: Ablex.
- Gallagher, J. (1969). Gifted children. *Encyclopedia of Education Research*, 4th Edition. R.L. Ebel (Ed.). NY: Macmillan, 537-544.
- Gardner, J. (1984). *Frames of Mind*. NY: Basic Books.
- Keating, D. (1976). *Intellectual Talent*. Baltimore, MD: The Johns Hopkins Press.
- Kulik, J.A., & Kulik, C.C. (1984). Synthesis of research on effects of accelerated instruction. *Educational Leadership*, 42(2), 84-89.
- Reynolds, M., Birch, J., & Tuseth, A. (1962). Review of research on early admission. In M. Reynolds (Ed.) *Early school admission for mentally advanced children*. Reston, VA: Council for Exceptional Children.
- Swiatek, M.A., & Benbow, C.P. (1991). Effects of fast-paced mathematics courses on the development of mathematically precocious students. *Journal for Research in Mathematics Education*, 22, 139-150.
- Stanley, J.C., & Benbow, C.P. (1981). Using the SAT to find intellectually talented seventh graders. *College Board Review*, 122, 2-15.
- Stanley, J.C., Keating, D., & Fox, L. (1974). *Mathematical talent*. Baltimore, MD: The Johns Hopkins Press.
- Stanley, J.C., & Stanley, B.S.K. (1986). High school biology, chemistry, or physics learned well in three weeks. *Journal of Research and Science Teaching*, 23, 237-250.
- VanTassel-Baska, J. (in press). Theory and research on curriculum development for the gifted. In K. Heller, F. Monk, and A.H. Passow (Eds.), *International Handbook of Research and Development of Giftedness and Talent*. London: Pergamon Press.
- VanTassel-Baska, J. (1983). Statewide replication of the Johns Hopkins study of mathematically precocious youth. In C.D. Benbow, & J.C. Stanley, *Academic Precocity* (pp. 179-191). Baltimore, MD: The Johns Hopkins Press.
- VanTassel-Baska, J., & Olszewski-Kubilius, P. (1989). *Patterns of influence: The home, the self, and the school*. NY: Teachers' College Press.
- VanTassel-Baska, J., & Chepko-Sade, D. (1985). *An Incidence Study of Disadvantaged Gifted Students in the Midwest*. Evanston, IL: Center for Talent Development, Northwestern University.
- VanTassel-Baska, J., & Strykowski, B. (1986). *An Identification Resource Guide on the Gifted and Talented*. Evanston, IL: Center for Talent Development, Northwestern University.

Art Teachers, Child Art, and Abilities: Implications for the Concept of High Abilities in the Visual Arts

by Gilbert Clark

Picture an artist in his or her studio, engrossed in thought, seriously committed to creating new art works, but "blocked"—unable to work—because the artist's highly valued agent, also his gallery director, has established several new conditions for a set of works they will commission. The artist, however, is troubled and unsure that the work can be done. The conditions the artist has been asked to impose while creating the commission are to:

- (1) work without reference to any observed real world objects; recreate all images from memory,
- (2) focus upon the expression of whatever transitory mood or feelings the artist experiences while working,
- (3) move to new and untried media and invent the techniques to be used with each new work,
- (4) create a unique, new, and different imagery in each new work in each new media; avoid any repetitions of subject matter or series of related images,
- (5) create a completed work, ready for exhibition, each time he or she comes to the studio,
- (6) studiously avoid criticism or critiques either by self or by anyone else,
- (7) only observe the works of other artists who are working under the same conditions, in the same spaces, and
- (8) studiously avoid contact with historical or contemporary imagery by other artists that may bear some relationship to this commission and the artist's previous work.

School Art Style

Readers may sympathize with this artist's 'block' and understand his or her inability to move ahead and create under this set of imposed conditions. The portrayal, however, is paralleled daily in art classes, particularly in elementary schools. Imagine the teacher in the art room as the "agent and gallery director" and the elementary classroom as the "artist's studio." The portrayal is a caricature, but it describes rules and conditions that teachers set for most elementary and many secondary students working in art classrooms all across the coun-

try; the outcomes are predictable and self-fulfilling. In the name of achieving 'original' child art or creative self-expression outcomes, most teachers have been taught in art education methods classes to set these conditions and actually to criticize learning experiences in art that differ from them.

Being asked to create under such conditions is detrimental to the expressive abilities, or to other growth in learning about the visual arts, of most students and particularly to those of high ability students in the visual arts. Like highly talented students generally, high ability students in the visual arts are inherently precocious in that they learn more and faster than others, can deal with abstractions more quickly than others, consciously understand generalizations with fewer encounters or examples than others require, and have developed advanced abilities that facilitate their achievements in the visual or performing arts. Precocious students in the visual arts often demonstrate unusual perceptivity in that they are more visually sensitive and observant than others. Their advanced awareness of, and sensitivity to, issues that can be translated into meaningful visual images, as well as their advanced sense of design and balance, color usage, and composition, are abilities they bring to creating meaningful works of art. They create more meaningful art work than other students because working with art media is important to them and they have a sense of the emotive and communicative power of the visual arts. These abilities, skills, and understandings are not, however, simply the result of physical maturation. Like most human behaviors, these are learned and, more specifically, clearly are the result of instruction or teaching.

Child Art and Creative Self-expression

The concepts of 'child art' and 'creative self-expression' and their promotion at all levels of education during the 1950's, 1960's, and 1970's, have been responsible for setting rules and conditions for the making of art in classrooms that has been antithetical to meeting the needs of high ability students in the visual arts. This

Gilbert Clark is a professor of art education and gifted/talented education at Indiana University. His address is School of Education 3109, 201 Rose Avenue, Bloomington, IN 47405-2001.

is because, in large measure, proponents of child art and creative self-expression have encouraged the retention of naive childishness or a total lack of striving for sophistication in students' art production as a major goal of "art education." One historical textbook, for example, warns art teachers to move children to new and untried media if they show any signs of mastery or real control of their work!

Whether for psychological or misguided aesthetic reasons, including veneration of obvious childishness, teachers who always manipulate school art experiences to encourage childish imagery or naivete actually are teaching a formula for making art as undesirable as those of the French or British Academies, noted for their sameness, that artists revolted against near the turn of the century. The products of child art centered teaching are remarkably similar across the country because the rules and conditions that guide its making, as in the art academies, are the same.

In music education, there are no similar concepts or sets of rules. Children who study music, particularly those who may be identified as highly talented, are not rewarded for remaining childish or for avoiding adult models and critics. Quite the opposite; music students are taught, in carefully controlled sequences, basic knowledge, skills, and techniques that continually are extended as the student masters increasingly more difficult and sophisticated musical literature. There is a constant interplay between attainment of requisite skills, the increased difficulty of that to be learned, and the joy of shared performances at each level attained. A precocious child in music is a student who has learned to perform with adult-like skills and abilities at an early age. Music students are not held back at childish, immature, or naive levels as are students in the visual arts. To do so today is to violate all we know about the abilities and characteristics of high ability students in the visual arts.

David Henry Feldman

David Henry Feldman has focused his attention on the study of child prodigies for a number of years and has revealed major insights about their learning that raise serious questions about common practices found in art classes, including classes for high ability students in the visual arts. Feldman claims, based on many years of research studying exceptionally high ability students, that there are several ideas about instruction and a number of condi-

tions for learning that must be met in order for high ability students to learn what is required for sophisticated achievement. He is adamant in claiming that growth in mastery of any subject is achieved only as the result of directive, systematic, prolonged, and intentional **instruction**. Feldman has explained that stages of child development are:

- (a) inherent in a specific discipline of knowledge, rather than in a child's mind or growth;
- (b) continuous and process based, rather than trait based;
- (c) the direct result of educational interventions, rather than simple maturation; and
- (d) controlled by children's learning environments, rather than spontaneously generated.

Feldman has asserted that high ability students must work within a subject matter that clearly is organized in a structural hierarchy in order to be aware of their growth and in order for teachers to introduce and challenge increasingly more difficult levels of attainment. In addition, attainment of increasingly more sophisticated knowledge, skills, and understandings is predicated upon interactions with teachers or mentors who have clear understanding of the subject's organization as well as highly developed abilities to communicate and teach the appropriate content and learning experiences.

Necessary Conditions

One way to understand Feldman's explanation of what high ability students require is to imagine a student born into a relatively remote, rural community as, for example, Tipton, California. According to Feldman, if a child is born there, with all the inherent potential needed to become a world class sculptor, this potential probably cannot and will not be realized, simply because of the lack of **instructional** experiences and opportunities needed to shape the potential through the youth of the child. One requirement, exposure to the numerous possibilities expressed by great sculptors during the history of the world, would be difficult to meet. The likelihood of exposure to, and opportunities to use, major sculptural tools, media, and materials also would be remote. So, too, would be the requirement of contact and work experience with teachers and mentors able to guide the student into increasingly more difficult and challenging learning experiences as sculptural projects. Awareness of how sculptors have expressed common themes in three-dimensional media, and opportunities to work at advanced levels with a practicing sculptor as a mentor,

would be very difficult to obtain or provide in communities where these resources aren't commonly available.

The implications of the ideas presented in this paper and of Feldman's research and findings call for a complete redefinition of the "rules" or conditions students should work with in art classrooms, particularly for students identified

as having advanced abilities in the visual arts. Rather than the stifling conditions described earlier, high ability visual arts students should deliberately be taught the knowledge, skills, and understandings they need in order to grow in their ability to interact with art objects and to make art. They also should be asked, allowed, and encouraged to:

- (a) work with active reference to observed real world objects and create images from their observations,
- (b) focus on the communication or expression of specific purposes and moods or feelings with appropriate imagery,
- (c) work with familiar media, using appropriate techniques they have been taught for personal expression, as well as be taught new media and techniques as needed to expand expressive possibilities,
- (d) create unique works as well as repetitions of subject matter and experiments with media as related images in a series of explorations of a theme,
- (e) create completed works, ready for exhibition, only with the amount of time needed for the student's realization of his or her purposes,
- (f) studiously seek criticism or critiques either by teachers, one's self, or by fellow students,
- (g) actively seek awareness of, and be provided, the works of adult artists who are working with similar themes or problems, and
- (h) actively seek contact with, and be provided with, historical and contemporary imagery by adult artists that may bear some relationship to the student's work

A Dream Deferred

I wish to soar across the sky
My wings outspread.
But someone said you cannot fly.
Your arms are useless in daring flight.
A dream deferred, a dream put out,
a shriveled green thing, no longer white.
No longer pure and alive in my mind.
Now I can't find it.
That dream went to hide.
It is as dry as a desert
So barren and bare.
There is simply
nothing there.

My dreams have been shattered
like a broken vase,
and little bits come up
and pierce my face.
Little bits that hurt me,
make my heart black.
My dream isn't there.
There is a lack.
I can't soar with an eagle,
crawl in the hills of the moon.
I know I won't fly.
At least, not soon.

Paul Nagel, 5th Grade
Acacia School
Fullerton, CA
Carol Copley, teacher

References

- Clark, G., & Zimmerman, E. (1984). *Educating artistically talented students*. Syracuse, NY: Syracuse University Press.
- Clark, G., & Zimmerman, E. (1986). A framework for educating artistically talented students based upon Feldman's and Clark and Zimmerman's models. *Studies in Art Education*, 27(3), 115-122.
- Feldman, D. H. (1980). *Beyond universals in cognitive development*. Norwood, NJ: Ablex.
- Feldman, D. H., & Goldsmith, L. T. (1986). *Nature's gambit: Child prodigies and the development of human potential*. New York: Basic Books.

Resolving Inequities: Discovery and Development of Talents in Student Populations Traditionally Underrepresented in Gifted and Talented Programming

by Donna Rae Clasen

Resolving the issue of underrepresentation of certain groups of students in gifted and talented programs is critical for the field of gifted education. Until this issue is resolved, gifted programming will be labeled elitist and regarded as unfair, even inappropriate, by large groups of educators, parents, and policy makers. Further, the absence of representatives from all populations means the loss of vast pools of talent, for without discovery and nurturance, few students, regardless of their promise, will reach their potential.

Most frequently included among the underrepresented are the economically disadvantaged and those traditionally identified as minority: African-Americans, Hispanic-Americans and Native Americans (Baldwin, 1987; Richert, 1987). Concern for their underrepresentation in gifted programming is not new (Passow, 1972; Torrance, 1977), but the need to do a better job of addressing the needs of high ability minority and disadvantaged children becomes more and more pressing as these students appear in increasing numbers in the nation's schools, and the neglect of their talents becomes more apparent and problematic.

Five Barriers

Currently, at least five barriers prevent many minority and disadvantaged students from developing their talents and abilities.

1. *Socio-economic inequality.* Students from economically disadvantaged environments often have limited social and educational opportunities to explore and develop their capabilities. The result is that potential remains potential only.
2. *Educational history.* Many minority and economically disadvantaged students currently in school are the first generation of their family to have the opportunity for special programming and for post-secondary education. Support systems and role models for educational endeavors are absent.
3. *Educational achievement as a cultural issue.* Academic achievement has often been viewed as a majority group value, and some

students are rejected by peers for achieving in school since this is viewed as "selling out to whitey" (Fordham and Ogbu, 1986).

4. *Expectations.* In many instances teacher expectations for minority and disadvantaged students are low; opportunities and challenges which help students explore and expand abilities are missing (Strom, 1990).
5. *Conceptualization of giftedness.* Underrepresented students are frequently omitted from gifted programs because inclusion rests primarily on their performance on assessments which may not be culture-free or culture-fair.

Identification models and program options for minority and economically disadvantaged children with exceptional talents must take these five barriers into consideration. They are a major focus in Project STREAM, a program designed to identify and develop talents of high ability minority and economically disadvantaged students. The program is a collaborative effort among three Wisconsin universities and six school districts, including rural, mid-sized and urban schools.

Admission to STREAM is based on a variety of assessments: problem-solving and art tasks, leadership measures, achievement scores, grades. Teacher and peer nominations supplement the assessments. High scores on any one measure qualifies the student for STREAM since program offerings match abilities. Students are identified in sixth grade and remain in the program throughout middle and senior high school. Currently over 200 STREAM students ranging from grades 6-12 are involved in one or more school-district or university-based programs designed to provide access to opportunities to develop potential. Simultaneously, through staff development and parent meetings, STREAM is working to remove the barriers obstructing proportionate representation in gifted programs by modifying the knowledge, skills, and attitudes of students, educators, and parents.

STREAM has six basic assumptions:

1. Talents and abilities are distributed equally without regard to gender, race, or ethnicity.

Donna Rae Clasen is professor of educational psychology at the University of Wisconsin-Whitewater, Whitewater, WI 53190

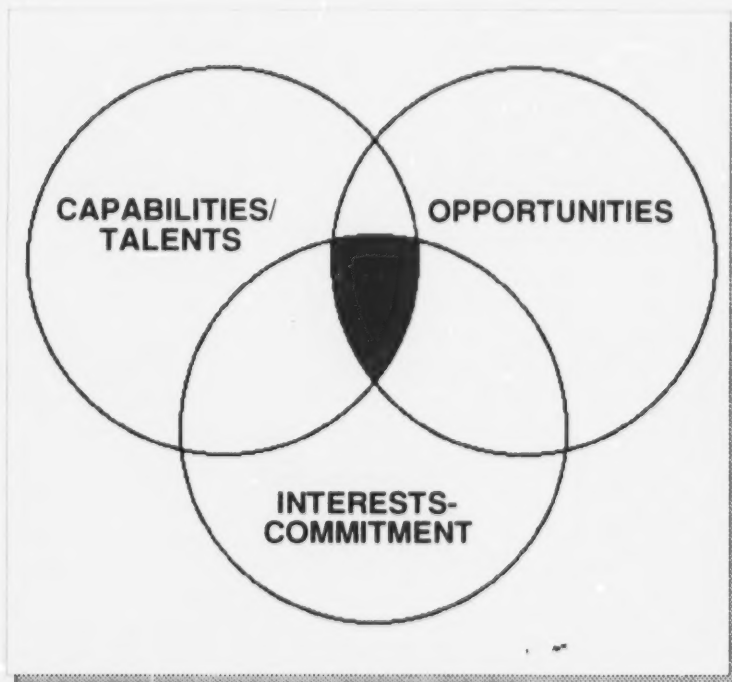
2. Multiple talents exist and can be identified.
3. Systematic and continuous attention to students and their talents is necessary.
4. Psychological components are as important as academic components in talent development.
5. Families must be involved in their children's education.
6. Universities need to link with minority and economically disadvantaged students, their teachers, and their parents when students are young.

From the STREAM Project, a tripart Talent Development Model has emerged. The model identifies three conditions which increase the likelihood that talent will be discovered and developed. It addresses the barriers to proportionate representation and has implications for both identification and programming.

Talent Development Model

The Talent Development Model suggests that three factors must be involved when considering talent development: (1) Capabilities/Talents, (2) interests (evolving into Commitment) and (3) Opportunity. It is the interaction among the three that will create the fertile field for the seeds of potential and will determine the level of ability development. (see Figure 1)

Figure 1



Capabilities/Talents

Talents appear in all humans, but some individuals have the capacity to achieve at superior levels of excellence and to a degree that is rare in society. These individuals are called gifted, talented and/or exceptional. In STREAM, we found that the label in and of itself may make a difference. Focus on the use of the words *talent* and *talent development* was helpful for three reasons: (1) In many instances both parents and students were unfamiliar or uncomfortable with the term gifted. Talent, however, resonated for them; they knew of many "talented" individuals. In addition, some students held skeptical views of "gifted" classes and were hesitant to affiliate with an identified gifted program; (2) Since talent is often regarded as more modifiable than a gift, focus on talent helped promote the program emphasis on potential rather than on demonstrated ability; (3) The STREAM concept of exceptional ability embraced the non-academic as well as the academic, and the concept of talent lends itself to both.

Talents first emerge as potential. By school age many children will be able to demonstrate potential quite clearly. This is problematic, though, for the children who have had limited opportunities and experiences even to become aware of their special abilities, let alone to explore and elaborate upon them. Their promise of potential is harder to identify. Thus in STREAM we cast the widest net when identifying high ability children and offer the most inclusive programming options to be sure not to overlook children whose high potential may be almost invisible (Tannenbaum, 1983). We accomplish this through the use of multiple forms of identification, traditional and non-traditional, and by erring on the side of over-identifying rather than under-identifying. We also give equal attention to both academic and non-academic abilities.

Equal attention to a range of abilities means that parity of esteem must exist for all talents that can be used in meaningful and productive ways. The value of a talent, however, will be determined by culture. While most identified talents will be valued across cultures, the degree to which they are prized as well as the ways in which they are manifested will vary. Thus, in identifying talents it is necessary to understand the cultural context in which students live and to understand the values of that culture. Attention to both academic and non-academic capabilities becomes critical, for a society may value one over the other. Generally, schools in the United States value verbal and mathematical academic talents

and in non-academic areas, athletic skills. A healthy functioning social order requires a variety of interlocking talents, however, and a commitment to identification and development of a broad array of talents recognizes that no talent is inferior to another. Each talent, at the outer reaches of its development and expression, is sublime.

Interests/Commitment

Exceptional talents are manifested first as potential. Similarly, talent will be revealed initially as an interest (Feldhusen, 1992). In the Talent Development Model interest must be matched by capability, and the two must interact. Over time and through multiple experiences, the student may increasingly take control of learning and developmental opportunities, and the metamorphosis from embryonic interest to commitment may occur. Eventually, for potential to be reached, commitment must evolve from the nascent interest.

Interaction between ability and interest is necessary but not sufficient. As in all cases of metamorphosis, for development to proceed properly to the limits of

genetic endowment, the right environmental conditions must be present. Both potential and interest require nurturance. For talent to mature, there must be support from school and home for exploration of both ability and interest. Affective needs must be met as well as talent needs. When support systems for meeting these needs are missing or are especially fragile, substitute support must be provided. A mentor, tutor, community or school leader, even a peer group can provide the environment necessary for supporting the talent or interest.

While interest is often an early indicator of talent, occasionally we encounter a state that is both awesome and terrifying: Passion. This is seen in the student who never stops drawing or who is fascinated with numbers or who spends every free minute on a computer. Often the passion is accompanied by a well developed ability, and the commitment/capability interaction is fixed. Outside of the passion area, school may seem meaningless to such students. While we may see our task as one of helping the student diversify his or her interests, we may

discover that the student is turning away from traditional developmental mechanisms such as school because of this consuming passion which requires non-traditional developmental support mechanisms. Our best hope may be to help channel the energy force in growth-determining experiences. This may mean acceleration, mentoring, or a variety of out-of-school experiences which we must facilitate and legitimize. Regardless, we need to be open to the possibility of encountering another Langston Hughes, Michelangelo, or Diego Rivera in any educational setting, including the most impoverished.

Opportunities

The third key component of the Talent Development Model is opportunity. Raw ability is seldom enough. Opportunities are the linchpin in talent and interest interactions. Without multiple experiences to explore an interest area

or to test the strength of a talent, both interest and talent may die. Several years ago, Eric Heiden, a 7 gold medal Olympic skating champion, was asked in a television interview to assess his success. He began his response by saying, "Well, first of all some-

Eric Heiden, a 7 gold medal Olympic skating champion, was asked in a television interview to assess his success. He began his response by saying, "Well, first of all someone gave me some skates."

one gave me some skates." This is what opportunity is all about.

Without "skates" pools of talent may go unrecognized and undeveloped. The underrepresentation of disadvantaged and minority students in gifted programs suggests that an inestimable number of gold medal winners are being lost for the want of some skates--in the sciences, arts, and humanities--in all areas of worthwhile human endeavor. To counter such loss, the opportunity to reveal capabilities must be made available, and because skates need to fit, the opportunities must be varied and multiple. Tannenbaum (1993) has noted that the elements of luck or chance are often ignored in discussions of talent but that a certain amount of luck is always necessary in the realization of talent. It is easier to be lucky when conditions are created that make luck likely rather than just possible.

Talent development is never assured, but the likelihood of potential being realized is greatly increased when capability, commitment and opportunity are appropriately matched and

allowed to interact. The meshing of these three factors creates the zone of gifted development in the Talent Development Model. Within this zone, talent is more likely to emerge from potential and interest and be transformed into commitment.

Talent Development in Urban Settings

In many urban schools and schools with large populations of low income students, the first needs to be met are survival needs. Exploration of exceptional talents often has low priority. Yet it is from the recognition and development of talent that the most healthy survival will come. While the Talent Model is applicable in any setting, it has proven particularly effective in STREAM by providing direction for identification and programming in urban settings. The model assumes that exceptional potential is present in almost any educational setting, regardless of how difficult it may be to discover. And it reminds us that we must give potential and interest the best possible chances if they are to develop.

Urban schools have been described as sites of "withered hopes; stillborn dreams." (Maeroff, 1988). The societal environment of many urban children is more conducive to despair than to dreams. Our commitment as educators to finding potential and providing opportunities can help keep dreams alive. Several suggestions may be helpful regarding talent development in urban settings:

Assume the presence of exceptional talents manifested in extraordinary ways.

For example, within the family and local community, students may be recognized for leadership, courage and service. There are children who take on adult roles in caring for siblings, preparing meals, getting siblings to school when adults are at work, or making special arrangements when siblings are sick. These young people often show a remarkable degree of responsibility and outstanding problem solving and decision-making skills. Their abilities may be unrecognized by the schools and, in fact, on occasion may result in tardiness or incomplete assignments that may be attributed to lack of motivation.

Consider cultural context when identifying abilities, and for nominations tap resources outside the school, such as, parents, community leaders, or the local librarian. Adopt a concept

of giftedness that embraces multiple abilities and that recognizes the talents esteemed within student cultures. Require multiple assessments, both traditional and non-traditional. There are enough tools to do this. What is needed is the will to use them and the determination to develop programs compatible with talents.

Provide opportunities for students to reveal talents

STREAM has developed several special activities intended to encourage the demonstration of talents. These activities, called ORCA (Opportunities for Revealing Concealed Abilities), range from dramatic improvisation to writing workshops to class activities that are open-ended and allow for personal interpretation of tasks. ORCA activities are particularly helpful for discovery of creative thinking, problem solving, leadership, and communication skills.

Include traditional means of identification as well as non-traditional

Many students will score very well on regular achievement tests. For example, over 10% of the STREAM students have qualified to participate in the Northwest Talent Search for precocious math students by virtue of scores at or above the 95th percentile on a standardized math test. The Search gives middle school students the opportunity to qualify for summer scholarship programs and to receive local and state recognition by taking either the Scholastic Aptitude Test (SAT) or American College Test (ACT). Prior to participating in STREAM, most of the eligible students were unaware of this opportunity; and some were unaware of their high test scores. The case was similar for students with extremely high verbal scores.

When we expect to find students with high scores on traditional tests, we look for them. Once they are identified we can advocate for the student with teachers and parents, campaigning for the most appropriate programming.

Assume the role of match maker

Do not do this alone. Collaborations play a critical role here, and urban settings offer many possibilities. Almost every urban institution can make some contribution to development of talent. Mentorships, internships, special programs or classes are examples. Partnerships can be established with performing artists, business leaders, television and radio personalities, musicians or sports figures. Many groups and individuals are eager to help young talent, but

do not know how. Approach them with a well devised plan.

Encourage student participation in pre-college programs

Many colleges and universities offer programs ranging from Saturday enrichment classes to day programs to summer residency programs. These opportunities not only nurture abilities, but introduce students to an environment which respects their individual talents, lauds brightness, and encourages—even expects—a college orientation. The programs usually provide students an opportunity to become familiar and comfortable with a college campus at an early age. Parents and family members also are frequently invited to participate in some aspects of pre-college programs.

Use the power of role models

Everyone needs role models, but they are especially necessary for young people who will be the first generation of their family to go to college or to receive special opportunities for talent development. They are equally important for students whose families may not have a history of educational opportunity, and family members as well as the students need the encouragement and example of role models.

Expect high achievement

Regardless of the special talent a student possesses, overall academic achievement should be expected. In most instances, this is a mandatory corollary to talent development since it is required for entrance to institutions of higher education. The absence of academic achievement may mean that talent potential will never be realized.

Respect resilience as a talent

Many young people are trying to cope with the demands of school while existing in impoverished circumstances, dysfunctional families and chaotic and depressed living arrangements. Some encounter pressure from family and peers to underachieve academically (Fordham & Ogbu, 1986). Many are fighting the pull of the streets and the lure of "easy money" from preying on the weaknesses of others. We must systematically provide support for young people to help them resist these forces which would limit their development and work to promote forces which will support their efforts to succeed in the mainstream of society. Recognizing and valuing talents and abilities is one

way to do this, and providing opportunities to develop those talents is what encourages their dreams and extends their vision.

Our society cannot continue to ignore those traditionally underrepresented in gifted programs, for in doing so we sabotage excellence. There is no excellence without equity, and equity is a matter of will and commitment. It is not the absence of talent which leads to a disproportionate identification of gifted, but the absence of our willingness to find and to develop the talents.

References

- Baldwin, A. Y. (1984). *The Baldwin Identification Matrix 2 for identification of the gifted and talented: A handbook for its use*. New York: Trilium Press.
- Baldwin, A. Y. (1987). I'm black; but look at me, I'm also gifted. *Gifted Child Quarterly*, 31(4), 180-185.
- Feldhusen, J. (1992, December). *Talent Identification and Development*. Paper presented at the Jacob K. Javits grantees meeting, Washington, DC.
- Fordham, S., & Ogbu, J. U. (1986). Black students' school success: Coping with the burden of "acting white." *Urban Review*, 18, 176-206.
- Maeroff, G. (1988). Withered hopes; stillborn dreams: The dismal panorama of urban schools. *Kappan*, 69(9), 632-638.
- Passow, A. H. (1972). The gifted and the disadvantaged. *The National Elementary Principal*, 51, 24-31.
- Richert, E. S. (1987). Rampant problems and promising practices in the identification of disadvantaged gifted students. *Gifted Child Quarterly* (4), 149-154.
- Strom, B. (1990, April). The influence of teacher perceptions on the identification and treatment of gifted minority children. In B. Shade (Chair), *Issues in the education of gifted and talented minority children*. Symposium conducted at the annual meeting of the American Educational Research Association, Boston, MA.
- Tannenbaum, A. J. (1983). *Gifted children: Psychological and educational perspectives*. New York: Macmillan Publishing.
- Torrance, E. P. (1977). *Discovery and nurturance of giftedness in the culturally different*. Reston, VA: The Council for Exceptional Children.

Project STREAM (Support, Training and Resources for Educating Able Minorities) is a collaborative program between a university system and five public school districts. Gifted students are identified in sixth-grade and provided with systematic academic and social programming through middle and senior high school. STREAM has been supported in part by a Jacob Javits Grant (R206A001 88), UW-Wisconsin Office of Continuing Education, and the Dept. of Public Instruction.

Dealing with the Challenges of Reform and Restructuring: Will Gifted Education Survive?

by Donald J. Treffinger

In this paper, let us consider some issues that are at the very core of the welfare—and quite possibly, the survival—of gifted education, not only decades from now, but likely within the next three to five years. The need to deal with these issues arises from a very sincere concern that children and youth need, and deserve, educational opportunities that are commensurate with their abilities and that will recognize and nurture their talents, strengths, and sustained interests. We cannot permit education to dissolve to doing the same things to herds of students, in the same way, over the same time period, and in the same setting for everyone. Designing “a level playing field” should never mean creating artificial impediments for learning for anyone. We can speak all we want about “world class standards,” but unless we take the difficult actions to bring out the best in everyone, we seem to be “talking the talk without walking the walk.” In gifted education, our role must be to work with school reformers to make restructuring or school improvement a staging platform for serious, extended, creative efforts by professionals and community members, joining together, to design and implement new images of learning and productivity for everyone.

School improvement is a broadly encompassing effort, challenging all of us to create and hold a vision of what schools might become and to find and build the best potentials in everyone—not just to create “repair stations” for fixing up deficiencies. We dare not place our attention on school improvement solely on its serving as a vehicle for remediation and minimum competencies. If such an outlook becomes entrenched, the minimum competencies too easily become maximum expectancies. Whether or not one is an advocate of gifted education, a school improvement effort that focuses only on minimal expectations is fundamentally condescending. It can all too easily become, “Look, you’re not going anywhere. You’re dumb. You’re not successful now, and you probably won’t ever be. You don’t have any worthwhile talents. And you sure as anything can’t do any complex creative or critical

thinking, problem solving, or decision making. For you, it will be good enough if we can get you up to a point where you won’t do harm to yourself or to others, and (we hope) where you won’t be too much of a nuisance for us in the future.”

Those of us concerned with programming for giftedness and talent development surely have an important message to bring to the school reform movement in this regard. We need to be part of the school reform, restructuring, or improvement dialogue, because if we are not, no one else may be able (or perhaps willing) to bring the message we can carry to the schools (Tomlinson & Callahan, 1992; Treffinger, 1991 a). It is important, however, to be quite careful about what our message will really be.

Our message needs to be: “We can do better than settling for mediocrity and minimum standards—for everyone! Moreover, we **must** do better; we cannot afford to waste anyone’s talents in today’s world.”

Our message needs to be: “School improvement is an on-going process, not a one-shot event. All of us in the educational venture must make deliberate efforts to make schooling a process of seeking, finding, and becoming immersed in learning—in what students can do best, and in ways that will help them become as productive and powerful as they can possibly be.”

Our message needs to be: “School improvement is not just a matter of slogans about Zero Defects or Commitment to Quality. Excellences arise from continuous efforts to improve, combined with an openness to and encouragement of innovation. Our challenge is to forge a new vision, in which every teacher, every administrator, every student, parent, employer, and community member assumes a commitment to discovering and developing talents to their fullness.”

We might believe that this is the message we’ve been sending. But there is cause for some doubt about that. There are some reasons to be skeptical that it has been our message, and we can be certain it is not the message many educators throughout the country have been hearing

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Presented at the 1993 KAGE Conference in Louisville, KY, March 5, 1993.

Donald J. Treffinger is President of the Center for Creative Learning in Sarasota, FL and Professor of Creative Studies at Buffalo State College, Buffalo, NY. He may be reached at 813/351-8862.

from gifted education. All too often, our colleagues have heard a message best characterized as one of elitism and special interest for a narrowly--and arbitrarily--defined group. There is a very real and grave danger that we have defined ourselves out of the mainstream of school reform, and hence perhaps committed professional suicide in the process.

Considering experiences from more than two decades of involvement in gifted education, throughout the United States and internationally, we might well be increasingly concerned with the present state of the field. The amount of "gifted program bashing" has been increasing greatly, in the media generally, among many professionals in education-at-large, and, most threateningly, in the form of greatly reduced or eliminated support for programs in many places. Even more to the point, however, we must become increasingly concerned about what is taking place within gifted education. As Pogo once said, "We have met the enemy, and it is us."

First, by and large, gifted education seems to have approached school reform in a posture of avoidance ("This, too, will pass.") or one of defensiveness ("Let's pull those wagons around in a circle."). But the reality is that school reform will not pass; it is here to stay, and our task will never again be the same as it was before. At all levels, from local school districts to national conferences, there have been clear indications of active resistance, defensiveness, and hostility, in which the school reform movement is often viewed, implicitly and sometimes explicitly, as "the enemy." In many ways, we ought to be embracing school reform with enthusiasm, for, if done well, it could become our strongest line of support.

We must also recognize a great need to hold our own traditional views of gifted education up for careful reexamination. Too much of the time—but certainly not in all instances—gifted education seems to be permanently frozen into a view of giftedness, identification, and programming that is outdated, and no longer viable in relation to theory research support, or practice. The common wisdom of the early 1970's served a laudable purpose: to create awareness and interest. We learned our lessons well back then, as youngsters memorizing Catechism lessons, but in too many ways, we do not seem to have grown much (Treffinger, 1991c). We learned the right answers to the key questions: the categorical definitions, the 3-5% incidence, multiple selection criteria, and the

qualitatively differentiated curriculum. The responses of 1971 will not be satisfactory for the questions of today or tomorrow.

In the face of pressures all around us in education to seek a new vision of teaching and learning, to recognize and respond to diversity, and to work towards continuous improvement, the traditional catechism of gifted education has not played very well. We must at least entertain the view, as unappealing as it may be, that our current reality came about because the traditional answers we memorized **should not** have played well. This view would lead to the need to rethink and reexamine the long-held views on which much of gifted education today has been constructed. We need to do this, not just from a sense of expedience, not just because it might help us to "play better" in the drama on today's educational stage, but because it is the right and necessary thing for us to do. In that effort, we need to reexamine three major issues.

Nature of Giftedness

We must shed our limited thinking that giftedness is defined as one's place in a normal distribution of some one-dimensional, fixed set of traits or abilities such as those measured by traditional intelligence or achievement tests. Perpetuation of the view of gifted as high IQ or achievement, within a narrowly defined construct of academic ability, is a myth that has been inadequate and indefensible for decades. Writers such as Gardner (1983) on multiple intelligences, or Feldhusen (1992) on talent development, for example, are contemporary scholars who are pushing our conception of giftedness and talents far beyond the limited traditional view of "the gifted." The challenge is not only recent, however; we would also do well to rediscover the fundamental messages of E. Paul Torrance, J. P. Guilford, and Calvin W. Taylor from the 1960's and earlier!

We really need to begin to think of giftedness, not as a static, fixed, unidimensional category, but as a dynamic way of describing a person's track record of creative or talented accomplishments, over a sustained period of time, in a domain that matters intensely to the person. In this sense, giftedness is not only a trait or characteristic that exists within an individual's mind or personality (Dunn, Dunn & Treffinger, 1992; Treffinger, 1991b; Treffinger & Sortore, 1992). Giftedness is a function of

- our cognitive abilities, personal characteristics, styles and preferences, and sustained interests;

- the strategies or operations we learn and apply (such as creative and critical thinking, problem solving, or decision making);
- the context or environment in which we function;
- the outcomes or products towards which our efforts are directed.

We should think of giftedness as a person's sustained accomplishments, in a context, towards important goals, over time.

Identification

Certainly, this view of giftedness will have considerable impact on our approach to identification. We must move away from the view of identification that emphasizes labels, selection, and categorical placement. *Instead, we should be seeking new ways of recognizing many kinds of talents and strengths in students.* Instead of asking, "How creative are you?" for example, our research has suggested that it is much more powerful and instructionally informative to begin with the question, "How are you creative?" We would do well to create new emphasis on identifying needs—opportunities to serve students better rather than on identifying students and asking, "Are you really one of them, or not?" We might seek ways to make identification flexible, inclusive, diagnostic, and focused toward talent development.

Programming

We have persisted in the quest for "The Gifted Program," when we should be much stronger in pursuit of multi-option programming. Empowering, creative instruction can never be "one size fits all." The great array of talents among students demands that we seek many and varied instructional responses. The idea of a single, fixed program for a limited group of students must give way to a much richer, more varied (and more comprehensive) array of programming possibilities.

We need to continue to be strong and persistent advocates for educational programming that recognizes and responds to students' strengths and talents. But the complexity of that challenge is far greater than we have heretofore envisioned. As we consider the changing world of education, and the new perspectives we need for gifted programming, we can identify many areas where there are dangers on either side of a channel, through which we must navigate very carefully.

First, we do not want students to have their strengths, talents, and interests buried in dull,

boring/dismal instruction in classrooms in which teachers are forced to teach down to the lowest denominator. We must clearly say, "That kind of instruction is no longer acceptable for *anyone*." By the same token, we cannot respond to a full array of strengths and talents through a single, 'patched-on,' pull-out gifted program for a narrowly defined, fixed group of students. Let us not substitute one rigid, unresponsive kind of program for another! We need to press our efforts for effective programming across many areas (Treffinger and Sortore, 1992), including:

- *Individualized Basics.* Schools must attend to the needs of students to experience challenging instruction in all core subject areas. All instructional programs should recognize and respond to different learning styles (Dunn, Dunn, and Treffinger, 1992), and include opportunities for higher level or productive thinking.
- *Appropriate enrichment.* A rich and effective school program provides a wide variety of enrichment opportunities for all students, to help stimulate curiosity, to heighten anticipation for learning, and to serve as a foundation for extended learning (Renzulli & Reis, 1985 ; Torrance & Safter, 1989). All students benefit from appropriate enrichment, in different and varied ways. Enrichment is a springboard through which many talents can be recognized and nurtured, not just a reward or privilege for a few pre-designated students.
- *Effective acceleration.* Students need opportunities to progress at an appropriate rate or pace. Appropriate and flexible grouping for challenging instruction (which must not be mindlessly equated with "tracking") must be provided for all students, in ways that will benefit everyone.
- *Independence and Self-Direction.* The development of self-directed, independent, or autonomous learning skills has been emphasized in many national and state educational reform programs. We share, and can contribute substantially, to these efforts (Betts, 1986 ; Feldhusen, 1990; Treffinger, 1986; Treffinger & McEwen, 1989).
- *Personal and Social Development.* The effective school program helps all students to seek and develop their strengths, talents, and interests, and provides opportunities for students to blend individual accomplishment and success with the collaborative and teamwork skills essential in today's world.

Second, we do not want students to be victimized by lack of challenge masquerading as egalitarianism or cooperation. By the same token, recognizing that talents and strengths exist much more widely than we have heretofore considered in gifted education and can be nurtured through effective instruction, we must not create or support arrogance and elitism. Much of the criticism we have experienced may well have been of our own making; like Marley's ghost, we have forged our own chains, link by link.

Third, we do not want to create a system in which many students are underserved and undertaught because of color, creed, geography, poverty, or handicaps. By the same token, we need to recognize that we will not solve these problems simply by tinkering with tests and cutoff scores and then placing students in fixed programs that are unresponsive to diverse instructional needs. The important question should be how to recognize and respond to the talents and needs of all students, not just to find better ways to decide who should be "in or out."

Fourth, we do not want a standardized curriculum in an inflexible school day, in which students might be denied the opportunity and time to discover and pursue their talents. By the same token, we need to respond to the authentic talents and interests of students, not to groupings formed through arbitrary criteria that do not really describe a community or domain of inquiry. (We often say, "Gifted students need time and opportunity to be with others who are similar to them." It may be much more accurate to suggest that specific talent and interest areas drive this need, and its satisfaction, far better than any traditional gifted criteria might.)

Fifth, we do not want to place so much emphasis on being "well-rounded" that we fail to recognize the importance of passionate pursuit or immersion in one's talent. Being well-rounded is a laudable focus only if one aspires to grow up to be a golf ball. By the same token, we must not overlook the value and importance of being able to communicate effectively, or of being competent and knowledgeable about the worlds of the arts, humanities, and sciences around us, or of being able to function as collaborator in a group or team.

Finally, we do not want to perpetuate the misunderstanding that one teacher, alone in a classroom, can be everything to everyone. By the same token, we should not be satisfied with

gifted programs in which we remove a few students from the regular classroom, in order to do for them (or "to them") a set of activities that really should be happening in a good regular classroom for all children. We must use school improvement as a vehicle for drawing into the total school program many of the strategies and resources that, for years, have been the staples of the gifted program. As (and not, "if") school improvement accomplishes its most important goals, we will increasingly recognize that we no longer will need to make up for what should have been happening in the regular program (but was not).

With a view to the future, we must begin thinking, now, about programming for giftedness in the kind of schools we want to create, not the kind we used to have. This will be quite likely to lead us in the direction of creating many and varied services, offered by many people, in different ways and places, for students with many different kinds of strengths and talents. We need to turn our focus from being "gatekeepers" to becoming "prospectors for potentials." Instead of "the gifted program," we might think more about programming for giftedness and talent development. The outline for a new paradigm for gifted education has already begun to take shape (Dunn, Dunn & Treffinger, 1992; Feldhusen, 1992; Treffinger & Sortore, 1992). Its structure and dimensions are evident in ways that are possible to implement at the state or school district levels. We should not be naive about the challenges that paradigm shifters and pioneers face. Old paradigms struggle against their demise, and do not slip off quietly into the night. But it is no longer possible to invoke those challenges as justifications for failing to move where we know we should go. We teach our students to be creative thinkers and problem solvers; we must ask no less of ourselves!

If we can just focus and direct our attention and efforts to "doing the right thing," the challenges of policy and funding can be overcome. The policies and narrow, exclusive funding caps we have today can be changed by the very same mechanisms through which they were created. In fact, we believe that advocacy for an inclusive, contemporary view of talent recognition and development is quite likely to garner much greater and broader enthusiasm and support than the traditional approaches to gifted education were ever able to command.

This is not to say that the task will be easy; it will not. The winds of change are blowing

with great force and gusto in education these days. Everyone feels overwhelmed, or nearly so, with new demands, new priorities, new pressures. More and more is added to our platter, but nothing ever seems to be taken off. Confronted with these pressures, with conflicting demands, and with uncertainty about the best course to follow, it can be all too tempting to retreat to the comfortable and familiar ways of operating. We dare not yield to that temptation. It will surely have dire consequences, and it falls short of the promises we must make—to our students and to ourselves. Keep in mind the challenge of Robert Frost:

*The woods are lovely, dark and deep.
But I have promises to keep,
And miles to go before I sleep;
And miles to go before I sleep.*

I Have a Friend

I have a friend who lives in my house.
He sits with me on the steps,
and follows me down the street
to the park, where he hides in the trees
and whispers in my ear, "You can't catch me!"
In the summertime we are at the beach.
He swims underwater, dancing and shaking
and never holding still even when I hold my breath.
Sometimes he is short and fat,
and sometimes he is so tall
he can touch the treetops. He can slide up a wall
or hip-hop down the stairs. He warns
the butterflies when I am near.
He goes places I can't follow.
He keeps my dreams secret and safe.
But when the sun goes down, he disappears into
the darkness. Night falls, and I go home.
In the morning he will be waiting with the sun.
He is yesterday's night. . .
left for the day.

Joanna Piper, Grade 5
Henry J. Kaiser School for Arts and Humanities
Oakland, CA
Jill Russe, teacher

References

- Betts, G. (1986). The autonomous learner model for the gifted and talented. In: Renzulli, J. S. (Ed.), *Systems and models for developing programs for the gifted and talented*. (pp. 27-56). Mansfield Center, CT: Creative Learning Press.
- Dunn, R., Dunn, K. & Treffinger, D. J. (1992). *Bringing out giftedness in your child*. New York: John Wiley.
- Feldhusen, H. J. (1990). *Individualized teaching of gifted children in the regular classroom*. Buffalo, NY: DOK Publishers.
- Feldhusen, J. F. (1992). *TIDE: Talent identification and development in education*. Sarasota, FL: Center for Creative Learning.
- Gardner, H. (1983). *Frames of Mind*. New York: Basic Books.
- Renzulli, J. S. & Reis, S. M. (1985). *The schoolwide enrichment model*. Mansfield Center, CT: Creative Learning Press.
- Tomlinson, C. A. & Callahan, C. M. (1992). Contributions of gifted education to general education in a time of change. *Gifted Child Quarterly*, 36 (4), 183-189.
- Torrance, E. P. & Safter, H. T. (1989). *The incubation model of teaching*. Buffalo, NY: Bearly Limited.
- Treffinger, D. J. (1986). Fostering effective independent learning through individualized programming. In: Renzulli, J. S. (Ed.), *Systems and models for developing programs for the gifted and talented*. (pp. 429-460). Mansfield Center, CT: Creative Learning Press.
- Treffinger, D. J. (1991a). School reform and gifted education: Issues and opportunities. *Gifted Child Quarterly*, 35, 6-11.
- Treffinger, D. J. (1991b). Creative productivity: Understanding its sources and nature. *Illinois Council for the Gifted Journal*, 10, 6-8.
- Treffinger, D. J. (1991c). Future goals and directions. In: Colangelo, N. & Davis, G. A. (Eds.), *Handbook of gifted education*. (pp. 441-449). Boston: Allyn & Bacon.
- Treffinger, D. J. & McEwen, P. (1989). *Fostering independent creative learning*. Buffalo, NY: DOK Publishers.
- Treffinger, D. J. & Sortore, M. R. (1992). *Programming for giftedness [Three volume series]*. Sarasota, FL: Center for Creative Learning.

ished in the United States following the Marland Report (1972) viewed giftedness as a fixed, unitary trait manifested dichotomously. That is, some youth or people have it, most do not. This concept also favored the view that giftedness is genetically determined, a view promoted by Terman's (1925) master titling of his series of research reports *Genetic Studies of Genius*. Even though the Marland Report had delineated six types of giftedness, program developers for the most part adapted a unitary definition in which children were simply classified as gifted or not gifted.

In contrast to the unitary trait concept, it seems likely that most youth have intellectual strengths, but those strengths are diverse. Starting early in the elementary grades some children show talent or aptitude in mathematics, others in verbal communication activities, and some in other talent domains. Later some will exhibit their budding talents in home economics, creative writing, learning a foreign language, or dramatics. There are wide differences among youth in both their aptitudes for these diverse areas and in their interest or motivation to pursue studies in them. Nurture and nature operate simultaneously; school, home, and community experiences seem to foster growth of the special talents, and they provide educational opportunities for the requisite skills associated with the talent area. "Gifted" is a static concept. It is fixed. Talent and talent development are dynamic concepts in which individual students and their special abilities can grow and develop with nurturance.

Some youth demonstrate high or extremely high levels of special talent in relation to their ages. The child who reads at age three, the student who learns calculus in grade eight, the college freshman in science at age sixteen are all examples of youth whose talents are extremely advanced. These students exhibit precocious learning behavior. Others exhibit precocity in ways that do not so clearly show the grade level disparity. Students who show high levels of problem solving skills in a shop class, those who write excellent poetry in a high school English class, and student actors who exhibit extraordinary empathy with the characters they are portraying reveal special talents which traditionally have not been seen as manifestations of giftedness. Nevertheless, they are valuable indicators of potential for high level achievement or accomplishment. Such talent indicators may appear in all youth (including minorities, the economically disadvantaged, and the

culturally different).

School programs must undergo change from traditional conceptions of the gifted few which favor select subgroups or populations and concentrate efforts instead on finding and nurturing special talents and abilities among all youth. It is truly time for a new program, Talent Identification and Development in Education (TIDE). TIDE will serve us much better as a way of meeting the special needs of diverse school populations, as an approach to talent development among all youth, and as a means to serving the needs of our society in the emerging technological age.

Definitions

Talent is a complex of aptitudes or intelligences, learned skills and knowledge, and motivations/attitudes/dispositions, that predispose an individual to successes in an occupation, vocation, profession, art, or business (Gardner, 1992). Aptitude refers to specific abilities. Intelligence(s) is predominantly genetically determined ability or aptitude. Expertise is the capacity to function at a high level of proficiency within a domain of activity. Precocity is knowledge or skill in an individual at an age earlier than normal. Giftedness is a complex of intelligence(s), aptitudes, talents, skills, expertise, motivations, and creativity that lead the individual to productive performance in areas or domains or disciplines valued by the culture and time. Genius is giftedness which produces new conceptual frameworks that lead to paradigmatic shifts in a discipline, art form, profession, or field of business-economics.

Conceptions of Talent

A number of researchers, theorists, program developers, and curriculum specialists in gifted education have proposed and used the concept of talent as a framework for studying and/or developing human abilities. Some have used the term very specifically while others have used it interchangeably with giftedness.

Gardner (1983) proposed a new framework for conceptualizing human intelligences or talent based on a review of a wide variety of psychological research:

1. Linguistic : writer, poet
2. Spatial : sculptor, architect
3. Musical : composer, musician
4. Bodily, Kinesthetic : athlete, dancer
5. Logical, Mathematical : scientist, mathematician
6. Intrapersonal : psychiatrist, counselor

John F. Feldhusen is
Robert B. Kane
Distinguished Professor of
Education at Purdue
University and Director
of the Purdue Gifted
Education Resource
Institute.
He may be reached at
Purdue University,
School of Education,
LAEB 5116
West Lafayette, IN
47907-1446

7. Interpersonal : teacher, salesman

These intelligences might best be seen as the early, more general forms of ability, highly genetically determined, that find focus later in more specific talents as shown in the list above after the original category name. Gardner (1992) also speaks of a "giftedness matrix" which emerges in youth as a combination of two or more of the intelligences, acquired knowledge, skills, and interests-motivators. All are conditioned or developed by the range and nature of experiences available to the individual. The context for the development of talent begins in the family, extends to school and family, extends increasingly to peer influences, then to the influences of experts and the culture, and finally to high powered influence from the domain or discipline in which one is emerging.

In the statement cited earlier in this paper concerning gifted education and the school reform movement, Renzulli and Reis (1991) assert that "Talent development is the 'business' of our field" (p. 35). This statement links well with the talent domains which can be inferred from the Renzulli et al. (1976), Scales for Rating the Behavioral Characteristics of Superior Students:

1. Learning Characteristics
2. Motivational Characteristics
3. Creativity Characteristics
4. Leadership Characteristics
5. Artistic Characteristics
6. Musical Characteristics
7. Dramatics Characteristics
8. Communication Characteristics-Precision
9. Communication Characteristics-Expressiveness
10. Planning Characteristics

One of the most extensive efforts to clarify the concepts of giftedness and talent was presented by Gagne (1985). He suggested that giftedness is most often associated with general intellectual ability (g) while talent denotes more specific skills or aptitudes. He also reviewed the formulations of Cohn (1981) and Foster (1981), both of whom proposed a social domain of talent, and recognized leadership and altruistic orientation as talents in the domain.

Gagne concluded from his review and analysis of the concepts of giftedness and talent that general giftedness which manifests itself in four major domains (intellectual, creative, socio-emotional, and sensori-motor) emerges, as children move through the school years, as specific talents, mediated by family, school, personality, interests, attitudes, and identification experiences. Talent emerges as the specific ability that will facilitate learning or development in a particular occupation.

Feldhusen (1986), Koopmans-Dayton (1986), and Koopmans-Dayton and Feldhusen (1987) have presented evidence from research showing that vocational educators recognize giftedness and talents among youth enrolled in vocational classes in agriculture, business, trade-industrial, and home economics. Furthermore, teachers in these areas identified the specific characteristics which they saw as evidence of special talent. These characteristics included such traits as high skill in designing and conducting projects, resourceful in finding sources of information and materials, and superior problem-solving ability. This research showed that teachers in the vocational areas not only recognized (identified) youth with special talents but also provided special educational opportunities for them on an individualized basis.

Gardner's (1983) conception of multiple intelligences has been used as the base for the model educational program implemented in the Key School in Indianapolis. These intelligences may be viewed as representing broad talent domains. Gardner and Hatch (1989) argued that "...the concept of intelligence has remained central to the field of psychology." Central, however, to the theory of multiple intelligences is the concept that there are multiple intelligences and each of the intelligences varies independently in individuals, and individuals show unique profiles of relative strengths and weaknesses among the seven intelligences. Pilot educational projects based on the theory of multiple intelligences have progressed to the point where

Gardner and Hatch conclude that "...our programs with both older and younger children confirm that a consideration of a broader range of *talents* (our emphasis) brings to the fore individuals who previously had been considered unexceptional or even at risk for school failure" (p. 7). The theory and its application seem to support the talent conception presented in this paper, and we applaud the use of the terms "talent" in the quotation.

Again, overlapping with the several talent models described so far is a framework reported by DeHaan and Kough in 1956 under the rubric of a system for identifying gifted and talented students: (1) intellectual ability, (2) scientific ability, (3) leadership ability, (4) creative ability, (5) artistic talent, (6) writing talent, (7) dramatic talent, (8) musical talent, (9) mechanical skill, and (10) physical skills. The shift in terminology among "ability," "skills," and "talent" as well as their reference to giftedness reflects considerable uncertainty about the phenomena of human ability.

The work of DeHaan and Kough (1956) undoubtedly influenced the framers of the Marland Report (1972) and its six categories of "giftedness:"

"Gifted and talented [our emphasis] are those ... with demonstrated achievement and/or potential ability in ..(a) general intellectual ability, (b) specific academic aptitude, (c) creative or productive thinking, (d) leadership ability, (e) visual and performing arts, and (f) psychomotor ability" (p. 3).

While the field of gifted education embraced this definition for nearly two decades and echoed the overarching conception of "gifted and talented," prevailing practice adhered most of the time to the unitary conception of giftedness which is closely related to the "g" conception of general intelligence. There was also much criticism of the Marland Report categories (Renzulli, 1978) as representing non-parallel and overlapping conceptions of ability.

Much more recent is the conception of talent set forth by Bloom (1985) in his study of talent development. He

proposed four distinct areas of talent: (1) athletic or psychomotor, (2) aesthetic, musical, and artistic, (3) cognitive or intellectual, and (4) interpersonal relations. Later the fourth area was dropped because of difficulty in finding definitions or criteria for superior performance in that area. Within each of the first three areas two specific talents were selected for intensive research: (1) swimming and tennis in the athletic or psychomotor domain, (2) concert pianists and sculptors in the aesthetic-musical-artistic domain, and (3) research mathematicians and research neurologists for the cognitive-intellectual domain.

From the intensive case studies of the lives of talented people Bloom (1985) concluded that talent potential is present in many children. Talent growth clearly can be facilitated by family and teachers, early recognition and nurturance is vital, and motivation is a crucial ingredient. He concludes: "All of this is to point to the enormous human potential available in each society and the likelihood that only a very small amount of this human potential is ever fully developed. We believe that each society could vastly increase the amount and kinds of talent it develops" (p. 549).

The conception of talent is also clearly present in the "talent search" projects growing out of the research and development of Stanley (1976, 1984) at Johns Hopkins University. The Scholastic Aptitude Test, used as the testing instrument in talent searches, yields scores for two broad areas of ability, verbal and quantitative. Keating (1979) suggested that the course of development of abilities is from the very general type of aptitude represented by an intelligence test score through increasing differentiation of abilities as represented by verbal and quantitative scores and on to specific vocational aptitudes represented by one or more talents.

We would argue that the term "talent" should be used to denote the specialized aptitudes or abilities that develop in youth as a function of general ability, "g," or intelligence, and of their educational experiences in home, school, and the broad community. Talent grows as youth develop specific skills, interests, and motivations. Increasingly the general talent domain defines a more specific occupation and increasingly merges with expertise. For some youth and adults, talent and expertise will unite with divergent or creative abilities; they become the creators, innovators, inventors, composers, writers, architectural designers, theorists, or developers of new paradigms.

A Proposal: Talent Identification and Development in Education (TIDE)

From the review of conceptions of talent we propose four general domains for talent development in schools, depicted in Figure 3: Academic-Intellectual, Artistic, Vocational-Technical, and Interpersonal-Social.

These four domains should not be viewed as encompassing all talents. There are certainly many more. However, these four domains are especially useful at the middle and high school levels because they are correlates of subject matter areas, specific courses of instruction, and/or curricular and extracurricular school programs. Identification or talent search procedures already exist for most of these domains of talent, and the procedures can be applied as a part of the search for talent among all students, not just as identification of the gifted few.

There remains the problem, however, of matching youth talents to specific resources and activities that may foster or enhance talent growth and development. Teachers, counselors, and parents can do much to guide youth to appropriate resources and facilitate their use, but talented youth who are aware or becoming aware of their talent strengths should be involved in the search and matching process themselves. Treffinger (1986) and Betts (1986) have pioneered the concept of independent or autonomous learning. Feldhusen (1986) presented a planning model and instruments designed to help gifted and talented youth in the process of planning for and selecting learning activities to foster their own talent development.

There is no single program model that will optimize a child's talent development. A variety of services and resources are needed to match the child's talent strengths and provide the nurturance for continuing growth of those talents. School programs should be eclectic, using a variety of resources to meet the needs of talented youth. Talented youth themselves should increasingly be taught to recognize and understand their own talents, to join in the effort to find nurturing resources and activities, and to become independent or autonomous in guiding their own talent development.

Talent Identification and Development in Education (TIDE) offers a conception of giftedness and talent that should replace older conceptions of "The Gifted Child." From both parents' and school's points of view the most important things to know are children's talent

Conclusion

strengths or foci and how to nurture those talents to help children achieve to the highest level possible. To be sure, the school must address the goals of educating children in all of the areas typically addressed by schools - in a sense, the basics. But the TIDE conception asserts that all or most children have specific areas of talent strength or aptitude that should be addressed. Some children have great talent potential which calls for even more powerful nurturance or educational interventions.

References

- Betts, G.T. (1986). The autonomous learner model for the gifted and talented. In J.S. Renzulli (Ed.), *Systems and models for developing programs for the gifted and talented* (pp. 27-56). Mansfield, CT: Creative Learning Press.
- Beyer, B.K. (1987). *Practical strategies for the teaching of thinking*. Boston, MA: Allyn & Bacon.
- Bloom, B.S. (1985). Generalizations about talent development. In B.S. Bloom (Ed.), *Developing talent in young people* (pp. 507-549). New York: Ballantine Books.
- Cohn, S.J. (1981). What is giftedness? A multidimensional approach. In A.H. Kramer (Ed.), *Gifted children: Challenging their potential* (pp. 33-45). New York: Trillium Press.
- Davidson, J.E., & Sternberg, R.J. (1984). The role of insight in intellectual giftedness. *Gifted Child Quarterly*, 28, 58-64.
- DeHaan, R.F., & Kough, J. (1956). *Identifying students with special needs*. Chicago, IL: Science Research Associates.
- Feldhusen, J.F. (1986). A new conception of giftedness and programming for the gifted. *Illinois Council for The Gifted Journal*, 5, 1-5.
- Feldhusen, J.F. (1992). *Talent identification and development in education (TIDE)*. Sarasota, FL: Center for Creative Learning.
- Foster, W. (1981). Leadership: A conceptual framework for recognizing and educating the gifted. *Gifted Child Quarterly*, 25, 17-25.
- Gagne, F. (1985). Giftedness and talent: Reexamining a reexamination of the definition. *Gifted Child Quarterly*, 29(3), 103-112.
- Gardner, H. (1983). *Frames of Mind*. New York: Basic Books.
- Gardner, H. (1992). The giftedness matrix from a multiple intelligences perspective. Conference paper delivered at the University of South Florida, Tampa.
- Gardner, H., & Hatch, T. (1989). Multiple intelligences go to school. *Educational Researcher*, 18(8), 4-10.
- Glaser, R. (1984). Education and thinking, the role of knowledge. *American Psychologist*, 39(2), 93-104.
- Keating, D.P. (1979). Secondary school programs. In A.H. Passow (Ed.), *The gifted and talented: Their education and development*, The Seventy-eighth Yearbook of the National Society for the Study of Education (pp. 186-198). Chicago, IL: University of Chicago Press.
- Koopmans-Dayton, J.D. (1986). Characteristics and needs of vocationally talented high school students. Unpublished masters thesis. Purdue University, West Lafayette, IN.
- Koopmans-Dayton, J.D., & Feldhusen, J.F. (1987). Characteristics and needs of vocationally talented high school students. *The Career Development Quarterly*, 37(4), 355-364.
- MacKinnon, D.W. (1978). *In search of human effectiveness*. Buffalo, NY: Bearly Limited/Creative Education Foundation.
- Marland, S. (1972). *Education of the gifted and talented*. Report to the Congress of the United States by the U.S. Commissioner of Education. Washington, DC: U.S. Government Printing Office.
- Reis, S.M., & Renzulli, J.S. (1986). The secondary triad model. In J.S. Renzulli (Ed.), *Systems and models for developing programs for the gifted and talented* (pp. 267-305). Mansfield Center, CT: Creative Learning Press.
- Renzulli, J.S. (1978). What makes giftedness? Reexamining a definition. *Phi Delta Kappan*, 60, 180-184.
- Renzulli, J.S., & Reis, S.M. (1991). The reform movement and the quiet crisis in gifted education. *Gifted Child Quarterly*, 35(1), 26-35.
- Renzulli, J.S., Smith, L.H., White, A.J., Callahan, C.M., & Hartman, R.K. (1976). *Scales for Rating the Behavioral Characteristics of Superior Students*. Mansfield Center, CT: Creative Learning Press.
- Stanley, J.C. (1976). Use of tests to discover talent. In D.P. Keating (Ed.), *Intellectual talent: Research and development* (pp. 3-22). Baltimore, MD: Johns Hopkins University Press.
- Stanley, J.C. (1984). Use of general and specific aptitude measures in identification: Some principles and certain cautions. *Gifted Child Quarterly*, 28, 177-180.
- Tannenbaum, A.J. (1983). *Gifted children, psychological and educational perspectives*. New York: MacMillan.
- Taylor, C.W. (1978). How many types of giftedness can your program tolerate? *Journal of Creative Behavior*, 12, 39-51.
- Terman, L.M. (1925). *Genetic studies of genius: Vol. 1. Mental and physical traits of a thousand gifted children*. Stanford, CA: Stanford University Press.
- Treffinger, D.J. (1986). Fostering effective, independent learning through individualized programming. In J.S. Renzulli (Ed.), *Systems and models for developing programs for the gifted and talented* (pp. 429-460). Mansfield Center, CT: Creative Learning Press.



for Cultural Diversity

Call for Presenters...32nd Annual CAG Conference

Palm Springs Convention Center and Wyndham Hotel

March 4-6, 1994

The conference committee invites you to submit a proposal for a presentation in Palm Springs in March. The over-all theme is *Oasis for Cultural Diversity*. Presentations which relate to identification of, and appropriate programs for, gifted students from a variety of cultural backgrounds will be highlighted. Presentations on any other topic related to the parenting and education of gifted and talented students are also invited.

- Sessions will be 75 minutes in length, including question and answer time.
- Expenses for travel, lodging, and conference registration are the responsibility of each presenter.
- Presenters receive a year's complimentary membership in CAG, one membership per session.
- CAG will reimburse presenters up to \$35 per session for copying of handouts and/or supplies.

Please consider carefully the room set-up and audio-visual equipment which you request. Rooms and AV are assigned based on what is requested **on this form**. Later changes are difficult and often impossible. Presentation rooms will be set in one of two ways:

- theater style – rows of chairs facing the speaker
- classroom style – long tables, with chairs on one side facing the speaker.

If you need tables because of manipulatives which you use or tasks which you plan for your audience, please request classroom style. If your audience does not really need tables, please do not request them.

Complete form and mail by **October 15, 1993** to:
Jean Drum, 7822 Belgrave Ave., Garden Grove, CA 92641

Name: _____ Work phone: () _____
Address: _____ Home phone: () _____
City/State: _____ Zip code: _____
School district: _____ Position: _____

Will you have a copresenter? _____ If so, please attach a page with the above information for each copresenter.

Title of session (limit, 60 characters, including spaces)

Presentation description for the conference book (limit, 75 words) Please use complete sentences, describing content as accurately and completely as possible. Include implications for G/T students.

Reference: Please give the name and contact information for a person who could recommend you as a presenter.

Name: _____ Work phone: () _____
Position: _____ Home phone: () _____

AV equipment

(what you actually need)

- ☐ Overhead projector and screen
- ☐ VCR and monitor (25")
- ☐ Carousel slide projector and screen
- ☐ White board or flip chart

Preferred room set up

(check one)

- ☐ Theater style
- ☐ Classroom style

Level (check one or two)

- ☐ PreK/Kindergarten
- ☐ Primary (1-3)
- ☐ Intermediate (4-6)
- ☐ Middle school (6-9)
- ☐ High School (9-12)
- ☐ K/12

Major Target Audience

(check one)

- ☐ Teachers
- ☐ Parents
- ☐ Administrators
- ☐ Counselors
- ☐ General

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COMMUNICATOR

HIGH SCHOOL GIFTED

Summer Seminar '93 - California in the 21st Century

by Janis Van Dreal

Intelligence can only come when there is freedom—freedom to think, to observe, to question.
-Krishnamurti

One of the greatest challenges of secondary education is meeting the needs of gifted adolescents. Their bodies, minds and emotions are in transition, if not outright upheaval. They strive for both independence and social acceptance,

of providing a program which met both the intellectual and social needs of gifted adolescents. The result was CAG Summer Seminar 1993, a two-week residential program held July 11-24 at Westmont College in Montecito.



Grace Ma, Stephanie Flournoy, David Jackson, Aydee Gonzalez and Melanie Holm in Spanish Dance workshop

Twenty-two entering 10th and 11th graders and seven staff members came from around the state to launch California's first statewide summer school. No one knew quite what to expect from this pilot program, but it was soon apparent that intellectual challenge plus the freedom to discover and grow together equaled a powerful learning experience for everyone involved.

The Curriculum

This year's theme, "California in the 21st Century," was explored through an interdisciplinary, hands-

conformity and experimentation, and most of all personal identity. At a time when "freedom to think, to observe, to question" is essential, traditional secondary education offers larger classes, departmentalized learning and mandated curriculum. For gifted teens, "differentiated" too often only means "accelerated."

This past year CAG accepted the challenge

on program. Featured study areas included classical philosophies, political and governance models, technology such as virtual reality and genetic engineering, community development and environmental needs, cultural, natural and individual diversity, power, ethics and the arts. Students also interacted with fourteen guest presenters, professionals in the fields of busi-



Continued on page 32

PRESIDENT'S COLUMN



Identification Is Not Enough

by Sandra Kaplan

The national trend to identify gifted students from under-represented populations and to ensure that gifted programs reflect the diversity of students in schools populations is fundamental. The concern to identify "minority students" for gifted programs, however, does not appear to parallel a concern for curricular experiences that are appropriate for these students. Placing gifted students from di-

verse economic and cultural backgrounds into a differentiated curriculum designed to reflect the needs, interests and abilities of gifted students from the majority population, could be more harmful than helpful and not a good way to enable these students to realize their full potential. The differentiated curriculum for students from diverse backgrounds should therefore include these components:

1. **Common Differentiation** or that component of the curriculum that is responsive to the similarities that unite gifted students regardless of economic or ethnic background. This component includes the core curriculum and the differentiated experiences of depth, complexity, novelty and acceleration.
2. **Cultural Differentiation** or that component of the curriculum that reflects and extends a student's identity as a member of an under-represented population. This component augments rather than supplants defined differentiated learning experiences. For example, an introduction to philosophy and the classics would juxtapose Jefferson's ideals with those of philosophers representing other cultures, or a literature course would relate American literature to literature of the student's culture. The differentiated curriculum must provide the gifted learner with a thorough grounding in the intellectual culture of the majority as well as relating this majority culture to the other cultures which make up the fabric of American society. Participation in a gifted program should never mean choosing between cultures or creating competition between cultures.
3. **Participation Differentiation** or that component of the curriculum that prepares the gifted learner to participate with dignity in a gifted program. Successful participation in a gifted program and the intellectual development and career aspirations that follow from this may separate a student from the interests of family and community. This can be a traumatic experience for both student and family—the family is threatened by the perception that the gifted child "thinks she is too good for us" and the student finds it difficult to share new interests with old friends. Alienation from family is often too high a price to pay for participation in a gifted program. (This, it might be added, is not infrequently a problem for all gifted students.) Gifted people (not just students) need to learn communication skills that show them how to maintain and enjoy relationships with many kinds of people. They also need social and emotional support from the gifted program as they develop their high potential and move into a new world.

We cannot identify and place students in a gifted program without a continuing commitment to their whole life. We must be sure that we make it not only possible for them to be gifted, but also comfortable and satisfying.

PUBLISHED BY THE CALIFORNIA ASSOCIATION FOR THE GIFTED

Administrative Assistant, Carol Brown Spencer
916/965-0653...FAX 916/965-0654

The *CAG Communicator* is published five times during the year – in September, November, January, April, and June. Opinions expressed by individual authors do not necessarily represent official positions of the Association. Subscriptions are available to non-members at an annual cost of \$25.00.

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Submission of material

CAG encourages all interested parties to submit articles for publication. All submissions will be given careful consideration. Photos and camera-ready art work are particularly desirable. Student work should be accompanied by teacher's name and school. Send all material with your name, address, and phone number to Jean Drum, *Communicator* Editor, 7822 Belgrave Avenue, Garden Grove, CA 92641. You may phone Ms. Drum at 714/892-1745.

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CALENDAR

January 29, 1994

CAG/Orange County Council for Gifted and Talented Education, 21st Annual Conference

Estancia High School, Costa Mesa

For information call Karen Grinfeld, 714/879-5834 or Pat Phelan, 714/957-2846.



March 4-6, 1994

32nd Annual CAG Conference

Oasis for Cultural Diversity

Palm Springs Convention Center and

Wyndham Hotel

For information call 415/965-0653.

January 29, 1994

Children's Author Workshop for Parents and Students

Presenters: Robin Rector Krupp and Jody Fickes

Ventura

For information call Margaret Gosfield, 805/652-7229.

March 19, 1994

Mini-Conference for Parents, Educators and Students

Keynoter: Barbara Clark

Ventura

For information call Margaret Gosfield, 805/652-7229.

May 19-21, 1994

Student Leadership Conference for 7th-8th graders

Westmont College

For information call Margaret Gosfield, 805/652-7229.

NEWS BRIEFS

January Issue Devoted to Jeanne Delp

The January *Communicator* will be a memorial issue dedicated to the writings of Jeanne Delp (1927-1993) and remembrances by colleagues, friends and students. Jeanne was a pioneer in gifted education and a founder of CAG.

CAG Sponsors Art Contest

CAG will hold a juried art contest for students in grades 3 to 12. Entry deadline is January 31, 1994. Fifty works will be selected for exhibit during the annual CAG Conference in Palm Springs, March 4-6, 1994. Ribbons will be awarded to first, second and third place winners in each of three categories based on age. For more information, contact Carol Brown Spencer, Administrative Assistant, California Association for the Gifted, 415/965-0653.

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Jean Drum

Ready, Set, Reform!

by Jean Drum, Editor

Reform is an exciting idea and it is an idea dear to the hearts of Americans. In this country, which has as its very foundation a radically reformed concept of government, finding a better way, is a concept that we accept and embrace.

Right now it is the education of our young people that is calling for reform, and we are responding by planning for a new emphasis in our schools. Subject matter that is challenging, development of the habits of hard work, engaging students actively in learning and allowing them to learn at their own pace, and differentiated curriculum to meet individual needs are some of the suggestions made to improve education for all students. New ways of assessing student progress are being developed which will tap into the thinking skills of the students and demand evidence of their ability to apply what they have learned. All of these ideas are excellent, and can improve the educational experience for all students including the gifted.

In California, *Second To None*, the report of the California High School Task Force, has outlined the major ideas for school reform at the secondary level in this state. The interdisciplinary approach to subject matter is an important feature of this document, and since GATE programs have been using this for some time, its extension and growth will benefit gifted students. They are particularly challenged by the task of seeing relationships and using those relationships to unlock knowledge and understanding. High standards and expectations, an important feature of school reform, are indispensable to the full development of the gifted student, for unfortunately, it has all too often been possible for a bright youngster to get by while using only part of his potential. Portfolio assessments and the demise of the multiple choice test as a means of monitoring student progress will be a boon to gifted students. GATE students are often frustrated by the short answer test, since they can see many possibilities not covered by the answer choices. An opportunity to demonstrate their knowledge by showing that they can "analyze, organize, interpret, explain, synthesize, evaluate and communicate important experiences" will allow them full rein to use their gifts.

Cluster grouping for like interests and needs and flexible programming is also mentioned as part of the high school of the future in California. This is an excellent approach for gifted students, who can benefit from a chance to work closely with others, both teachers and students, with similar talents and interests. Interdisciplinary teams of teachers and larger blocks of time which will encourage and allow students to "solve complex problems, compose effective writing or design projects that measure real progress" are just what gifted students need. The CAG Summer Seminar has already shown how well this kind of scheduling can work, and the "honors block" found in the gifted program in many high schools has led the way. The school choice feature, which would allow students to attend "any school that has the program that most closely fits their interests" makes possible and practical high schools with special emphases—a technical-science major, or an arts major, for instance—that would create tremendous opportunities for the education of gifted young people. Other articles in this issue show how this sort of program is already in place here in California. The flexibility that is stressed in *Second To None* can allow GATE students to have access to specialized classes and also to be participants in the broader life of the high school community, a very important combination of options if they are to grow into adults who will both make full use of their gifts and then be able to work with others to serve mankind.

Second To None also talks of ensuring that faculty are proactive in supporting student success and seeing that students are "not stigmatized nor made to feel somehow different." We can hope that this will also serve to create a high school campus atmosphere where it is "OK to be smart," and that gifted students will not have to choose between using their gifts and being accepted by their peers.

"Courses of study to match their aspirations" is what *Second to None* is calling for. This is a high ideal and one of which California educators can be proud. We must ensure that these courses of study will truly match the aspirations of the gifted students of California.



Update From Sacramento

by Cathy Barkett

In fifteen years of working for the State Department of Education, I have never seen so much interest in school reform at every level of the educational system. Dwindling fiscal resources have forced us to examine and reexamine educational programs in terms of their cost effectiveness. Concern of educators and the general public over the preparedness of our graduates compels us to constantly ask if we are educating students so that they are equipped with the skills they need to enter the workforce or pursue higher education. Recent documents from the State level at the pre-kindergarten, elementary, middle and secondary levels suggest revisions in the way we conduct business. At the federal level, the Clinton administration has developed its own set of recommendations; those are described in the recently released "Proposal for the Reauthorization of the Hawkins-Stafford Act." Where are services for gifted and talented youth in all this reform activity? Does the reform movement place sufficient emphasis on insisting that *all* students, including those who are already functioning above grade level, constantly strive for greater understanding and achievement; or does it primarily address the needs of underachievers, with the rationale that "gifted students will succeed regardless of what we do (or don't do)" for them?

Let's look first at the State level. Educators and parents should be looking carefully at, and become involved in, the grade level initiatives. Three documents describe the elementary, middle and secondary reform agendas: *It's Elementary*, *Caught in the Middle*, and *Second to None*. All three documents call for changes in the way schools and classrooms are organized and include many outstanding suggestions for how schools can increase their effectiveness. All the suggestions in the three documents are guidelines, not mandates, and each school should develop a plan for change with the understanding that some things in each school are working well and should be maintained, while other aspects of the school program can and should be improved. To maximize the positive impact of change, school and district administrators, teachers, parents and the larger

community should carefully evaluate the current educational program, look at student outcomes to determine which aspects of the program need changing, plan change carefully with involvement from the entire educational community, and then evaluate the effects of changes on students over time. A thoughtful and well-planned action plan for school improvement will address the needs of every student in the school. As advocates for quality education for gifted and talented students, our involvement in the education reform movement will ensure that when change occurs, it is for the purpose of improving opportunities for *all* students, even those who are already achieving above grade level.

On the federal level, President Clinton has recently unveiled his education proposal, and it includes reauthorization of the Jacob K. Javits Gifted and Talented Program. Quotes from the proposal include sentiments that will be near and dear to the hearts of gifted advocates.

"...too often, schools fail to challenge students to do their best work, and students who are not challenged will not fully develop their talents, realize their potential, and learn to high standards."

"Schools must provide all students with important and challenging subject matter to study and encourage the habits of hard work."

"(schools should) engage students in learning and allow them to progress at their own pace."

President Clinton's proposal, if funded, would support schools who want to "demonstrate how strategies and programs identified for the education of gifted and talented students can be adapted and used to improve teaching and learning for all students in a school, and to help all students in a school develop their talents, realize their potential, and meet challenging performance standards, while not diminishing the curriculum and instruction for students traditionally identified as gifted and talented."

I do not know what went into the thinking behind this language; I do know that most legislation represents a compromise. I would have preferred to have the proposal address (and provide funding for) development of strategies and programs for gifted students as well

Catherine Barkett is the new Director for Gifted and Talented Education at the California Department of Education (CDE). She has a Masters in Education Administration from the University of California at Los Angeles and has worked as a consultant and administrator in the CDE for fifteen years. She may be reached at 916/657-3047.

as for adaptation to the entire school population. I know from my conversations with many of you that there are areas of the state where we are still struggling with how to best meet the needs of gifted and talented students, and we are not yet to a point where we have a successful program to export. On the other hand, I am relieved that gifted education is included in the bill, and I think the language is broad enough that it will allow local district administrators some discretion when they apply for funding (assuming there is funding).

I can't answer the question I have raised in the first paragraph of this article, but you can. You can do it by involving yourselves in the reform movement. You can do it through

thoughtful analysis of proposed changes. You can do it by maintaining a focus on student outcomes: standards for student performance, measurement of progress towards those standards and evaluation of whether or not the program we have planned for students is teaching them what we want it to. You can do it by reminding your colleagues that the goal is not to ensure that every student reaches the same standard of performance. Instead, the goal is to ensure that all students reach competence in every subject *and* to ensure that each student is constantly striving to deepen his or her understanding, to improve performance and to pursue education as a lifelong goal.

GATE Points the Way in the Reform Movement: CAG's High School Demonstration Sites

by Ron Fontaine

Over the years, educators concerned with programs for the gifted have pointed the way in a number of innovative deliveries. In the late 1950s and through the 1960s, the advent of Sputnik stimulated a marked interest in math and science. Teachers of the gifted were leaders in the development of federal grants to rework curriculum in both fields. Researchers in gifted education also contributed significantly to the body of knowledge regarding learning styles in efforts to develop methods for identifying students in order to qualify them for gifted programs in the 1970s and 1980s.

In the 1990s, teachers of gifted education are again assuming a position of leadership. In the middle school/high school reform documents *Caught in the Middle* and *Second to None* California's schools are urged to develop a more demanding set of core classes around which a more rigorous thinking-and-meaning centered set of experiences will be planned. Many schools are grouping students into interdisciplinary clusters to deliver this reformed

instructional effort. This departure from the traditional rather isolated series of individual subject area classes will be challenging to teachers who have not worked cooperatively with their colleagues from other disciplines. If this

feature of the current reform effort is to succeed, specialized training or inservice for the targeted teachers must be provided.

The current effort by the California Association for the Gifted to provide demonstration sites for the delivery of differentiated curriculum allows teachers of gifted, core or any area of the instructional

spectrum to observe valuable examples of a strong approach to interdisciplinary experiences. Two schools, Stockdale High and West High in Bakersfield, are entering their second year of providing demonstrations.

The design for delivering differentiated curriculum is based on the paper jointly developed by CAG and the California Department of Education. Primary contributors for CAG were Sandra Kaplan and Ron Fontaine; the department was represented by Fred Tempes, Barbara

"In the 1990s, teachers of gifted education are again assuming a position of leadership."

Ron Fontaine is Director of Special Projects, Kern High School District, Bakersfield. He may be reached at 805/631-3109.

Brandes and Barbara Abbott. The resultant ideas, especially the concepts of depth, complexity, novelty and acceleration are featured in interdisciplinary themes organized by the teachers at Stockdale and West and carried out in special units of instruction which were featured in four separate visitation days at the two schools in the 1992-93 school year. Complemented by middle school efforts at Luther Burbank, Olive Peirce, Martin Luther King and a cluster of Ventura middle schools, CAG offers visitors to its demonstration sites clear examples of the concepts contained in the joint venture dealing with differentiated curriculum.

Both schools have concentrated their efforts within the 9-10 core curriculum in designated interdisciplinary GATE classes. West High instructors Joan Jacobs (English) and Caren Preston (social studies) were among the statewide group of twelve teachers who gathered in Ventura in July 1992 to select a theme around which specific units could be developed for use in grades 3 through 10. The theme chosen was conflict and the units developed are now being explained in a series of CAG sponsored teacher institutes held throughout the state. Jacobs and Preston are presenting the ideas they helped to develop at these workshops and they are dem-

onstrating their own specific units to visitors who come to West High seeking ideas for delivering differentiated curriculum. In 1992-93 they were joined by West science instructor Laura Stockton. Stockton's creative integration of units allows students to observe the ecosystems which exist in a designated portion of their own back yards or any other outdoor space which can be observed over a period of time. Jacobs approached the broad theme of conflict in a study of English novels. Her units asking students to develop a party based on theses and ideas from the novel was received with enthusiasm by her visitors. Preston approaches conflict in world history with broad units focused on war and governmental change.

Stockdale's teachers dealt with conflict and force as themes in the 1992-93 school year. Scott Sullivan (social studies), Mike Griebeling (science), and Ron Brown, Teri Smith and Lewis Gillham (English) spent many hours discussing their individual and collective thematic applications. They acknowledged frustration in the initial stages, but considerable ultimate satisfaction with the year's work. Griebeling was successful with a study in science of the impact of a series of historic figures on the industrial revolution. The work was examined and used by both science and social studies classes. Students expressed surprise at Mr. Griebeling's ventures into their class assignments for English and social studies. The teachers at Stockdale also organized a joint effort aimed at a comprehensive study of totalitarianism. Students were required to develop and prove an original thesis about totalitarianism which became a joint social studies/English project.

Teachers from both schools attended a week long workshop dealing with interdisciplinary instruction presented by Sandra Kaplan this past summer. Scott Sullivan remarks that there was an awareness on the part of the Stockdale group about how much more they can do in 1993-94. They and their West High colleagues are now planning for additional demonstration days to illustrate more instructional ideas dealing again with the broad theme of conflict and using the concepts from the paper on differentiated curriculum.

Information about CAG's teacher institutes may be acquired by calling 415/965-0653. The Stockdale and West demonstration dates will be coordinated by Helen Felton at Stockdale (805/665-2800) and Mike McCoy at West (805/832-2822.)

Quilts

Patches on a quilt.
Angles, triangles and squares.
Thread in bright colors hold them
together.
Colors in patterns.
Hands moving quickly up, down,
under and over the quilt.
Working fast.
Original, each one is different and
special in its own way.
Rags and scraps of cloth change
magically into a masterpiece.
Keepsakes treasured and kept
for all eternity,
Passed on from one generation to
The next.

Jessica Temple, Grade 7
Cabrillo Middle School, Ventura

The Seminar Program in the San Diego City Schools

by Betty Olson

San Diego has the most exemplary gifted and talented program in the country. No school district in the nation has anything comparable to the San Diego centers for the highly gifted. No city has such a concentration of highly gifted within its public school system.

The Gifted and Talented Education program in San Diego City Schools was initiated to explore effective ways of educating underachieving, bright students. As early as 1960 for the elementary level and 1966 for the secondary level, the program targeted underachieving, highly gifted students. The program has demonstrated that by meeting exceptional students' needs for differentiated education and counseling, their lives could be dramatically improved in school and out.

The seminar program in San Diego City Schools is open to students identified as highly gifted (the upper one-tenth of one percent as determined by an ability measure of intelligence, or so designated by a school site committee to be GATE certified students who would profit from a seminar setting). During the 1992-93 school year, San Diego City Schools served 1,352 highly gifted students in 32 regional centers, including eleven middle/junior high schools and five senior high schools, and two combined junior/senior high schools. In 1992-93 the class size was eighteen students. For the 1993-94 school year, enrollment per class will increase to twenty. An additional five secondary centers (middle and senior high schools) will be opened to serve students in those areas.

GATE teachers hold special certificates earned through a districtwide program of training, which uses the GATE Curriculum Framework as the basis for teacher training. The teacher training is a dynamic process which is evaluated and updated each year, and seminar teachers are an important part of this process.

As the seminar program's success became evident, attention was focused on the needs of other gifted students, and cluster programs were initiated at a majority of the district's school sites. Both the seminar and cluster programs have, over the years, reflected the changing district needs and the understanding of giftedness. San Diego's programs have met the major challenges of the changing and multifaceted views of intelligence, which cross all strata

of society—racial/ethnic and economic. These needs have been nurtured accordingly.

The GATE Curriculum Framework, a major product of the GATE Five-Year Plan, provides goals for each of four specific areas, including content, process, product and learning environment. The Framework provides schools with models which can be combined to produce the most effective program for the students served, especially when the needs are diverse. Great emphasis has been placed on strategies and models which actively engage students in appropriately challenging tasks in order to develop independent, critical and higher order thinking skills, and encourage students to make use of knowledge and techniques in innovative

"San Diego's programs have met the major challenges of the changing and multifaceted views of intelligence, which cross all strata..."

ways—and this in a physical and emotional environment that recognizes multiple intelligences and learning styles.

Seminar instruction at all levels takes place in small group settings, allowing for student-to-student interaction, as well as student-to-teacher interaction. Content adjustments follow the GATE Curriculum Framework in planning qualitatively differentiated curricula for gifted students at all sites.

Each year a catalog is published describing individual seminar programs at all participating schools. Each center covers the basic core curriculum; each center uses the GATE Curriculum Framework and follows the UC a-f admission requirements. However, some centers offer a special emphasis, a special focus in their programs. For example, one secondary seminar center offers a math-computer-science emphasis, another a humanities approach, another may specialize in foreign language and linguistics, and yet another has a fine arts and performing arts emphasis. This provides the

seminar students with many options in planning their secondary education program. It also allows for exploration of possibilities based on the individual student's interests and talents.

The secondary seminar program provides many unique opportunities for all seminar students. Among them are 1) the Judges Outreach Program, which allows students to meet with judges from the Ninth Circuit Appeals Court to participate in discussions on constitutional law and the judicial organization of the country; 2) the Academic Decathlon which gives students a chance to participate in an all-day college-bowl type academic event where they are competing with students throughout the country; 3) the Academic League, based on a sports format with weekly competitions among four leagues in the district and ending with a final competition with winning teams from each league; 4) the Honor Seminars of San Diego which provides outstanding juniors and seniors with the opportunity to learn from and interact with highly qualified professional people from the community.

Advanced Placement classes (some 250 sections in all San Diego high schools) are an important part of the GATE program and are used by the secondary students. One of the largest AP programs in existence, these classes give college-bound students a challenging curriculum with the opportunity to earn advanced college standing.

The Community Resources for Programmatic Augmentation provides program offerings for students in GATE classes, with special consultants in the program having designed programs for the seminar students, both elementary and secondary. The choices are wide and varied for all GATE classes and are provided by community consultants in the San Diego metropolitan area. They offer special talents and skills in a variety of fields of interest and experience, talents not readily available in regular classroom activities.

Community and parental involvement in the seminar program in San Diego have been two very important factors in its success. Last year the first

annual Seminar Fair was held at Clairemont High School in February. The Fair was planned by seminar teachers with input from students (elementary and secondary), parents and community. It was attended by more than 1,600 seminar students, parents and siblings. There were 69 workshop sessions presented by students, by par-

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doesn't just happen, it is
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parental and community
support."***

ents and by community members showcasing the interests, the talents and the creativity of the highly gifted. The Fair was, as the students commented, "Awesome!" Plans are now under way for the second annual Seminar Fair to be held on February 26, 1994, at Clairemont High School.

A successful program doesn't just happen, it is brought about by dedicated teachers and parental and community support. Above all, the success of seminar program can be attributed to the dedication of Dr. David P. Hermanson. His exemplary leadership and commitment to excellence has made it all possible. He has consistently encouraged teachers to allow for individual projects, to teach concepts rather than facts, to bring students in contact with maximum talent and to follow the general philosophy of truth as something to be sought rather than revealed.

Perhaps the greatest tribute to our program comes from one it served. The following comes from a seminar student's reflection on her education, as it was given on her college application.

*"...But it is the sense of community
in the Seminar Program that has been*

the most effective catalyst in my acceptance of self and others. As Seminar students, we live and work together so closely that each of knows the trials and tribulations the others suffer; we can sympathize and console. This common experience creates deep bonds of friendship. We are not solely a group of intellectuals attempting to unearth truths of literature and science, but we are individuals discovering the truths of ourselves and growing together.

The search for truth of self has been my chief interest during the past three years. However terrifying leading seminars has been, teaching myself has proved far more difficult. Before I could take advantage of the opportunities for independent study, I had to learn how to learn. Several years of facts thrust into my ears and squeezed out through my pen had dulled my enthusiasm and motivation. I have had to redefine my values; to cease working for grades and begin working for my own enjoyment and enlightenment. This metamorphosis has been spurred by a deep desire to know myself and develop my individuality. The Seminar Program has nurtured my growth through tolerance of and attention to my individual needs. And, although I was not immediately able to exploit the flexibility of curriculum, the program eventually provided my incipient individuality with the freedom to expand.

The Seminar Program has provided all the necessary equipment for my expeditions through my internal world. In beginning to understand myself, I am gradually answering my questions of education. This progression can be a frustrating and painful one, requiring a process of deep meditation that would never have been possible in a mind-numbing system of force-fed education."

Betty Olson is a retired Seminar teacher.

Dr. David Hermanson, the director of Gifted and Talented Education for the San Diego City Schools can be reached at 1775 Chatsworth Blvd., San Diego, 92107.

Accelerated College Entrance: The Benefits of ACE

By Terry A. Thomas, Ph.D.

He was quite a bit shorter than the other students in his class, but they looked up to him anyway.

Aaron Shek was only 12 when he took his first calculus class at California State University, Sacramento (CSUS) through the Accelerated College Entrance (ACE) Program. This seventh grader was ready and able to begin university studies in mathematics, but he also had a full day at his middle school. Aaron's high aptitude and interest in mathematics were being enhanced at college while he took regular seventh grade classes with his agemates. Aaron was the youngest student ever to enroll in classes at CSUS, but despite his age, he seemed to fit in well with his university classmates. He could handle the work and the other students chatted with him and occasionally asked for his help on problems. Since his first experience with university mathematics classes, Aaron has been able to take more advanced mathematics courses, accumulating an impressive college record prior to his high school graduation.

The ACE program at CSUS was initiated in response to the CSU Executive Order Number 461 approved by the Board of Trustees in 1985. This executive order was designed "...to assist high schools in meeting the needs of gifted students, and to expand CSU efforts to encourage more able students from under-represented groups to participate in special programs..." A major provision of the executive order was to reduce fees for these students to an absolute minimum.

The ACE Center at CSUS was established in 1985 to give pre-college students the opportunity to study subjects which are not available to them in their regular schools. Qualified students take courses at CSUS each semester provided they maintain good academic standing with both the university and their regular school. Students must meet established test score and grade point standards as well as obtain recommendations from their school, their parents and the ACE director. The total cost to ACE students for admission and registration is \$5 per semester. Credits earned can apply toward a degree program at CSUS or may be transferred to other universities.

Since 1985, almost 300 students have participated in the ACE program on campus. These

students successfully completed university courses in a wide variety of disciplines, including:

Accounting	Government
Anthropology	History
Art	Home Economics
Astronomy	Humanities
Biology	Japanese
Business	Latin
Chemistry	Logic & Critical Thinking
Computer Science	Math
Criminal Justice	Music
Debate	Philosophy
Drama	Photography
Economics	Physical Education
Engineering	Psychology
English	Russian
Ethnic Studies	Sociology
French	Spanish
Geography	Statistics
German	

In the eight years of operation, the ACE center has kept track of its former students through follow-up questionnaires and occasional interviews. In August 1993, a survey questionnaire was sent to former ACE students who had attended CSUS during the years 1989 to 1991. These students were mailed a questionnaire at their last known address. A total of 42 completed questionnaires were returned from an original mailing of 130 surveys. The return rate of 32% was low, but follow-up mailings will increase the data yield. A preliminary examination of the responses provides some tentative findings that seem justified. Overall these students felt that the ACE experiences were extremely valuable to them. Among the benefits cited by these former students were: admission to prestigious universities, academic acceleration, increased self-awareness, continuing achievement and challenging career choices.

University Admissions

While a third of these students elected to attend CSUS, the other students were admitted to some of the most selective universities in the country. Students felt that their record of achievement at CSUS contributed significantly to their admission into some "big name schools"

Dr. Terry A. Thomas is a Professor in the School of Education at California State University, Sacramento. He is the Director of the Accelerated College Entrance Center at CSUS and he also directs the Academic Talent Search, a program for academically talented middle school youth. Dr. Thomas can be reached at CSUS, 6000 J Street, Sacramento, CA 95819-6098, 916/ 278-7032.

such as Stanford, Harvard, Johns Hopkins, MIT, CalTech, Harvey Mudd, Reed, UC Berkeley and others. Having a record of success in university studies prior to high school graduation tends to make a positive impression on university admissions officers.

Academic Acceleration

Earning university credits which were transferrable had some real advantages. Some students were advanced in class standing based on their ACE credits. Not only were students able to move into more advanced classes sooner, they received the obvious financial benefit these units represented. There was no indication that students suffered from "holes in their knowledge" or that they lost interest in their disciplines due to exposure to the faster paced instruction found in CSUS classes. This form of academic acceleration contributed to their academic achievement in high school and college.

Self-Awareness

Many students reported that they grew in self-confidence through the ACE program. They realized that they could be successful in university work, and that they were not "strange" for wanting to learn, even when this motivation was not shared by their agemates. These students experienced an environment where it was OK to be bright and to want to work hard at school.

Achievement

The experience at CSUS facilitated a smooth transition between high school and full-time university work. Most students attributed, at least partially, their achievements to their early experience in ACE. Former ACE students continued to demonstrate excellence as evidenced by high school and university grades and test scores.

Career Preferences

ACE students reported challenging career choices, which were based on early experiences in academic disciplines. Students indicated a satisfac-

tion with the choices they made and felt good about their progress toward these goals. Students had a clear view of where they wanted to be in the four years following undergraduate studies.

Comments

Given an opportunity to comment on the importance of their ACE experiences, these former ACE students spoke of ACE in glowing terms after an interval of four years.

"I had so many units, I had to get an extension to stay in school the full four years."

"ACE gave me confidence in my academic ability as well as my social skills. At an early age I learned how exciting college coursework would be."

"ACE showed me that the work levels required at the high school level are a joke compared to college. The university I attend now (Johns Hopkins) is even harsher than CSUS. For the major I'm taking, the expectations are unbelievably high and so is the work load."

"I am able to tell employers I attended college courses while in high school. Having college experience before actually attending college helped me a lot after I graduated from high school."

"ACE taught me I have the ability to succeed in academia."

"The experience was extremely positive. ACE along with AP credits have allowed me to acquire a B.S. degree in three rather than four years. The program is not for everyone, but it was beneficial to me. Thank you."

"ACE courses were a great start, and I was able to get used to college classes at a young age. I learned the self discipline needed to succeed in college work."

"It showed that I could do college-level work, and it kept me interested in education. It allowed me to graduate early from high school."

"ACE gave me more confidence going into college knowing I had succeeded in my ACE classes while in high school. It was great to have those units when I started college."

"I took mostly math courses through the ACE program and that experience motivated me to major in mathematics and to continue graduate studies in mathematics."

"After finishing undergraduate work at Harvard, I hope to attend medical school and eventually specialize in sports medicine. I believe my experience during high school helped me make the transition to college-level classes. ACE was a definite asset to my survival."

"I owe everything to the ACE program! I benefitted greatly from the experience. Thank you so much for the opportunity."

"I really enjoyed it because I was tired of high school, but didn't want to graduate early."

"I tested out of a full year of mathematics classes."

"ACE was an excellent program that has really helped me at Berkeley. It made it much easier for me to adjust to a college life/environment. It also helped me gain essential study habits and social skills."

Aaron Shek is now a junior in high school. He is a little taller than he was in the seventh grade, but he is still on the short side. He enjoys sports, extracurricular activities, and yes, even his classes at high school. The fact that he knows more mathematics than his classmates, perhaps more than his high school mathematics faculty, does not interfere with Aaron's association with his peers. He has found employment as a mathematics teaching assistant during the summer school at CSUS, and he serves as a tutor in his high school's study center. After high school graduation, Aaron definitely plans on college, but he isn't sure where. He should have several options.

Community and School Service - Another Challenge for Gifted/Talented Students

by Sharon Freitas

When developing the legislation to create California's Gifted and Talented Education Program, (AB 1040 Mangers, 1979) both parents and educators expressed concerns about how to address the social-emotional development of bright, young students. Sometimes within the accelerated academic program, the individual is overlooked, especially if the student is a very bright, sensitive child who may not have a healthy self-concept. Because the child excels in one or more academic areas, the teacher does not notice that he is quiet, withdrawn or often isolated on the playground. Research provides many profiles of such youngsters whose social-emotional development needs are not being met by the school. The four elements that resulted in Education Code 52200 provide for experiences that must be a part of every GATE program. These elements call for activities and opportunities to develop:

- sensitivity and responsibility to others
- a commitment to constructive ethical standards
- realistic, healthy self-concepts
- self-generating problem-solving abilities to expand choices

Later research from noted educators in the field of gifted education continued to reinforce the need to require educational programs to include elements and activities that would enhance the development of the "whole" child. Getzels (1981) stated, "Talents anciently thought virtuous: the talent to love, to understand, to empathize, to be compassionate, to be of service to others...they need as any other to be discovered and encouraged."

A. Harry Passow, in a paper delivered to the Fourth World Conference on Gifted and Talented Children in Montreal, stated: "...there is a specialized curriculum consisting of engagements which provide the individual with

learning opportunities needed to nurture his/her talents. It is here that potential scientists, musicians, poets, humanitarians, and other gifted/talented individuals begin nurturing those skills, knowledge, insights, modes of thinking and behaviors which will enable him/her (**given the opportunity**) to make outstanding contributions to society which, at the same time, are personally rewarding."

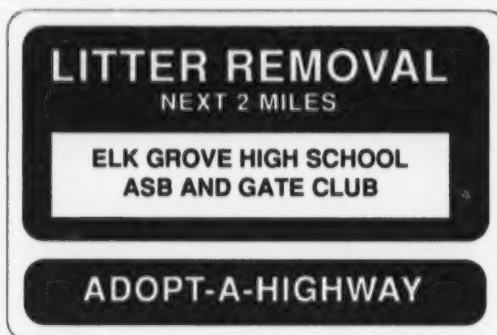
So, what can an educator do to meet the requirements of the legislation and also help these special students to reach for the goals stated in the elements? Community and school

service are one of the answers, as many GATE students in the Elk Grove USD high schools are finding out.

One such program at a very large high school involves a counselor who has established a group called the GATE

club. With more than 140 volunteer members, many different activities are offered throughout the year. One is the "Adopt-A-Highway" program where students are trained by the California Department of Transportation, provided safety clothing and equipment, and spend one afternoon a month actually cleaning up the shoulder of the freeway near their school. A sign is posted that declares that this section of highway, approximately two miles, is being taken care of by the GATE Club of Elk Grove High School. This is not only a service to the environment but great public relations for the GATE program and the local high school.

Another choice for students to serve their community is the "Convalescent Hospital Visitations" program. Being a buddy to a senior citizen or doing activities with the elderly help the students to become more aware of the needs of others as well as providing real service. Making a commitment to visit regularly, at



Sharon Freitas is
Project Implementor
for Gifted and Talented
Education, Elk Grove
Unified School
District. She may be
reached at
8820 Elk Grove Blvd.,
Elk Grove, CA 95624.

least once a month, is in itself a demonstration of developing responsibility towards others as the education code describes.

These types of activities, of course, are not the answer for all GATE students. Some, after a short experience doing such tasks, find that they are even more eager to continue their progress toward a college education just to avoid such work experiences when they enter the real world.

Another high school in the urban part of the district also sponsors a GATE Club on campus. The main difference is that this school is located in a very different socio-economic community. The students come from many different ethnic groups and from homes that may be in need of assistance themselves. Under the direction of a very dedicated English A/P teacher, the members of the GATE Club run the school store in order to raise funds for trips to colleges as part of their post-secondary planning. Many of the students involved have never been on a college campus and do not have the means to travel on their own or with their families to visit a college campus. Some of them have even been accepted by colleges without ever having seen the campus or even having a very clear idea of what a college looks like. Having this opportunity to work on campus in order to fund college visitation trips is definitely a great example of the fourth element, self-generating problem solving to expand choices.

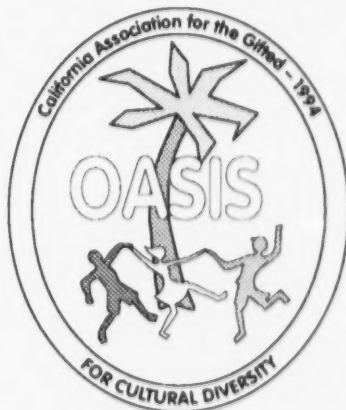
At this high school, community service projects such as volunteering once a month at

the "Loaves and Fishes" soup kitchen or washing dishes and helping to clean up after a holiday meal at a local mission are also part of the GATE Club activity.

It is a challenge for GATE coordinators and/or teachers to be aware of when and how to provide the right activity to include one or more of these elements. The key factor that makes both of these GATE Club programs work is the dedication of the staff person involved. Without an educator who makes time available before, during or after the school day, many GATE students just go through the paces. Having the opportunity to do community and school service adds to the element of personal and social growth for these students and builds a feeling of self-esteem and confidence in their ability to make a real difference in the world.

References

- Getzels, J. W. (1981). *Gifted children: Challenging their potential*. New York: Trillium Press.
- Passow, A. H. (1981, August). *The four curricula of the gifted and talented: Toward a total learning environment*. Paper prepared for the Fourth World Conference on Gifted and Talented Children, Montreal, Canada.



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The Orange County High School of the Arts

by Ralph Opacic

The Orange County High School of the Arts was established in the fall of 1987 to offer pre-professional training in the arts to high school students who demonstrate talent or potential in the areas of dance, musical theatre, visual arts, instrumental music and technical theatre. It has blossomed into Southern California's premier arts school with over four hundred students taking advantage of this unique educational opportunity. Students need not be Orange County residents to audition; in fact, some students have come to the Orange County High School of the Arts from out of state.

Complementing their arts studies, students are enrolled in academic course work at Los Alamitos High School which has been recognized by the State Department of Education as a Distinguished California High School and by the United States Department of Education as a National Exemplary School. Honors and advanced placement courses are offered. Arts classes are purposely scheduled from 2:00 to 6:00 daily to ensure that students can continue to meet their graduation requirements while enrolled in the specialized arts program.

Programs

Classical dance. The principal aim of the classical dance department is to prepare its students for professional careers in all aspects and disciplines of performing, choreographing and teaching. Courses are offered in ballet, modern dance and jazz technique. Pointe, variation, supported adagio, ethnic dance, musical theory, ballroom dancing, pilates, dance history and ballet terminology are included in the classical dance curriculum. Students have the opportunity to perform at several concerts throughout the year, one of which is devoted solely to student choreography.

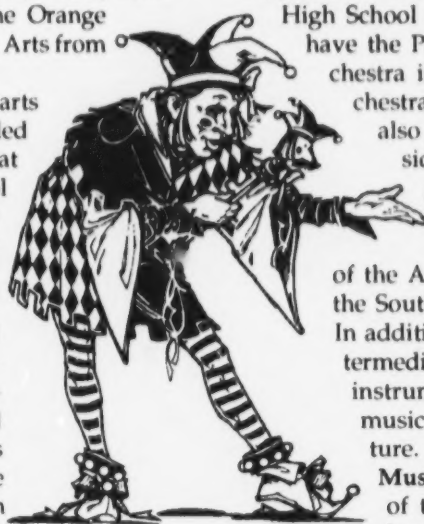
Commercial dance. The commercial dance program has been created to complement the classical dance program and expose students to

current dance forms. Essential dance forms such as ballet, tap, modern and street dancing are integrated into the program to offer a broad course of study for dancers desiring to develop the skills to dance on Broadway and in Hollywood. Opportunities for performing choreographic works created by professionals currently working in the commercial music industry as well as by fellow students are available throughout the year.

Instrumental music. The Orange County High School of the Arts is privileged to have the Pacific Symphony Youth Orchestra in residence. A chamber orchestra and a wind ensemble are also part of the instrumental music department. Each of these groups performs throughout the year both on the Orange County High School of the Arts campus and throughout the Southern California community. In addition, training is offered in intermediate and advanced piano, each instrument group, music history, music theory and symphonic literature.

Musical theatre. The foundations of the musical theatre curriculum are history and technique. Students are exposed to the history of the musical theatre, acting styles and in-depth studies of classical drama, Shakespeare and modern playwrights. Students may major in either voice or drama. However, all students are required to participate in acting, voice and dance classes regardless of their major course of study. Additionally, students are able to take elective courses in many areas including mime, improvisation, recording techniques, comedy, playwriting, directing, commercial acting techniques and audition procedures. Four mainstage productions and numerous smaller productions are presented to the public during each performance season.

Technical theatre. The technical theatre program provides students with fundamental skills and practical experience in all aspects of technical production. With the guidance of professionals in the industry, students receive hands-on training in set design and construction, light-



Ralph Opacic is the Executive Director of OCHSA. He may be reached at 3591 Cerritos Ave., Los Alamitos, CA 90720.

ing, sound, video production and stage and house management. The Orange County High School of the Arts theatre houses over forty productions each year, and technical theatre students are responsible for all of them. The experience of such a rigorous schedule presents a tremendous opportunity to master the skills of theatrical production.

Visual arts. The visual arts program stresses teaching students to think of themselves as artists. Courses are offered in drawing, painting, ceramics, sculpture, design, fibers, photography, jewelry, printmaking, computer graphics, murals, animation and art history. In addition, students continually work toward the presentations of bi-annual art shows which, in the past, have been hung in such venues as the Richard Nixon Library, Orange Coast College, Rancho Santiago College and the Bowers Museum.

Unique Features

The curriculum of the Orange County High School of the Arts differs from other programs in scope, intensity, expected student performance and levels of instruction. Orange County High School of the Arts training is intended to prepare students for entrance into universities or arts institutes or for entry-level work in the arts arena. All courses were developed with input from colleges, universities, art institutes and agencies and professional artists.

High expectations. A very important factor that differentiates Orange County High School of the Arts opportunities in art education from existing nonspecialized programs is in the type of instruction offered. Expectations of the professional instructors in the program are high, and the fact that students have responded very positively to the demands made of them is evidenced in the quality of their productions and their enthusiastic attitude.

Professional artist-teachers. There are presently sixty full- and part-time professional artist-teachers at the Orange County High School of the Arts who provide pre-professional instruction in their specialty areas. An important factor that differentiates the resulting arts education program from nonspecialized programs in other high schools is the practice of bringing in specialists in specific areas of arts education. While certificated teachers can offer a general arts education, the Orange County High School of the Arts artist-teachers can provide an in-depth, detailed exposure to each subject area.

Members of the Orange County High School

of the Arts teaching staff hold master's degrees or equivalent honors or credentials in their respective fields. More important, they are all currently working professionals and are able to give students not only a well-rounded education in the basic fundamentals, but also a realistic "hands-on" look at the current requirements for success in the industry. The cumulative background of the instructors includes, but is not limited to, performing, dancing, choreographing, directing and designing for the major stages in Los Angeles and New York; national and international tours; and experience in film, radio and television. Artist-teachers have included Bebe Neuwirth, Emmy award winner; David Allan, Bella Lewitsky and Loretta Livingston, internationally known choreographers; Clair Weeks, Disney animator; and Scott Ellis, Broadway director.

Professional arts organizations support and input. The Orange County High School of the Arts enjoys the support and advisory input of many arts agencies and professional arts organizations. These arts partnerships provide master classes, guest lectures, field trips, internships, tours, performances, facility use and curriculum planning. Some of these support agencies include the Joffrey Ballet, Disney Studios, the Orange County Philharmonic Society, Bowers Museum, the Long Beach Symphony, the Paul Taylor Dance Company, the Los Angeles County Museum of Art, the Long Beach Civic Light Opera, the Pacific Symphony, the Bella Lewitsky Dance Company, the San Francisco Ballet, and IATSE, the Theatre Technical Union. In addition, many colleges and universities have aligned with the Orange County High School of the Arts to provide enrichment offerings and support for students. They include New York University, the Boston Conservatory of Music, the Manhattan School of Music, the University of Southern California, U.C.L.A., UC Irvine, California State University (Long Beach), California State University (Fullerton), Rancho Santiago College, Chapman University and Cypress College.

Industry and community support. The Orange County High School of the Arts Foundation was established in November 1988 as a nonprofit corporation whose specific purpose is to raise funds necessary for the continuing support of the Orange County High School of the Arts through corporate donations, grants, small business sponsorships, parent/community support and special events. The Foundation raises over \$300,000 annually, partially through the sup-

port of such corporations as GTE California, the Ronald McDonald Children's Charities, Technics/Panasonic, McDonnell Douglas, Toyota Motor Sales, U.S.A., Inc., Northrop Corporation, Southern California Edison, Yamaha Corporation of America, Los Alamitos Medical Center, Fender Musical Instruments, Home Bank and Young Chang Pianos. Significant financial support has also come from foundations such as the Leo Freedman Foundation, the Orange County Community Foundation, the Smith-Walker Foundation, the Margaret E. Oser Foundation and the Robert Gumbiner Foundation.

Outcomes

The real success of the Orange County High School of the Arts is determined by the growth in the lives of the students while in the program and by their future successes, whether in college, career or life in general. As the reputation of the Orange County High School of the Arts grows, its students are increasingly being accepted into and receiving scholarships to the country's most prestigious art institutes and institutes of higher education.

Orange County High School of the Arts students and alumni are also already making their marks on the professional arts industry. An OCHSA student will have the leading role

when *Beauty and the Beast* goes to Broadway next year. OCHSA students have been featured in such films as *Hook*, *Newsies*, *The Addams Family* and *Kindergarten Cop*. An OCHSA student was featured in the national tour of *Bye Bye Birdie*. OCHSA students have had lead or recurring roles in numerous television shows and they have been seen in prestigious regional theatres across the country, including the St. Louis Municipal Opera, Atlanta Civic Light Opera, Philadelphia Light Opera and South Coast Repertory Theatre. OCHSA students now dance with the Joffrey Ballet, the San Francisco Ballet and the Royal Winnipeg Ballet. They have also toured with Paula Abdul and appeared in videos with Michael Jackson and Tina Turner.

The Orange County High School of the Arts, in short, has created a safe and supportive environment where promising young artists can interact with a peer group that shares their artistic, creative passion. It has increased the self-esteem of these young people by helping them discover their talents and develop their artistic abilities to their full potential. Last, by exposing these talented students to all areas of fine arts, it is building not only the artists but the arts audiences of the future.

I'm Just the Right...

I'm just the right age to write
deep purple poems
that bloom from my brain
like flowers in the
morning sun.

I'm just the right girl to
float through the sky
on a bed of frosted
white clouds.

I'm just the right stone
to be skipped
over white, blue and green
waves that the
ocean god knows.

I'm just the right age
to see sorrow
in an invisible way.

I'm just the right person to
look in an attic
filled with treasures
of delicious
times
and hear the echo
of long ago.

I'm just the right age to write
deep purple poems. . .

Jennifer Eason, Grade 8
DeAnza Middle School, Ventura

AP Classes in a Rural High School? No Problem!

by Tim Guzik

Teaching gifted students in small, isolated, rural communities offers many challenges and requires new approaches both inside and outside the classroom in order to develop a successful program. Most parents in rural communities are very supportive of establishing classes for their children that enable their youngsters to compete academically with the larger urban schools. The Advanced Placement program provides the kind of academic rigor that challenges both teachers and students to achieve at the highest levels of the academic and cognitive domains. The AP program has national recognition and is held in high esteem by colleges and universities throughout the country.

It might be thought that establishing a program would be a fairly easy task due to its high credibility and reputation for quality. However, rural schools have small enrollments, and this creates difficulty in scheduling new classes. Parents and students need to be educated about the benefits, challenges and obstacles of the program so that adequate resources can be redirected from already existing programs.

The first step to take when developing a program is to meet with the teaching staff and identify teachers who have an interest in developing a class. Next, it is important to attend a school board meeting and present the program to them for their support and approval. The third step is to begin the process of educating parents and community groups to establish the enthusiasm and confidence that is necessary for the program to succeed.

I am now in my seventh year teaching AP United States history at Del Norte High School in Crescent City. The success and reputation of the program has grown each year and now has a considerable following of students and parents who have a personal interest in the continuation and success of the program. Over the last few years I have seen many advantages of the AP program that make it an important consideration when making curriculum decisions for gifted students.

1. Because the program is national, it gives gifted students in isolated areas the knowledge and confidence that their skill level and subject matter knowledge are commensurate with that of any student in the country.

2. Universities and colleges hold the AP program in high esteem because the curriculum has national standards and emphasizes critical thinking, writing and solid subject matter requirements. This allows gifted students from small schools in isolated areas to compete on an equal footing with students from urban areas for admission to major universities.

3. Many rural communities are economically depressed. The AP program enables gifted students from low socioeconomic families to make substantial savings in college costs, since students who successfully pass the AP exam receive college as well as high school credit for taking the class. A dedicated student can complete as much as a year of college while in high school.

4. Confidence, companionship and positive self-esteem are some of the obvious psychic rewards. Students develop a special closeness and spirit of cooperation because they are all working toward achieving the goal of passing the AP exam in May.

5. Gifted students who are planning to attend the University of California system, where they are required to take achievement tests, show significantly higher results on the history portion of the exam when they are compared to students in standard history classes.

6. The gifted students in my AP class who take the Golden State exam in history consistently score in the honors and high honors range.

7. Most of my students who have gone on to major universities around the country have reported the advantages of the expository writing and critical thinking skills they learned in the class.

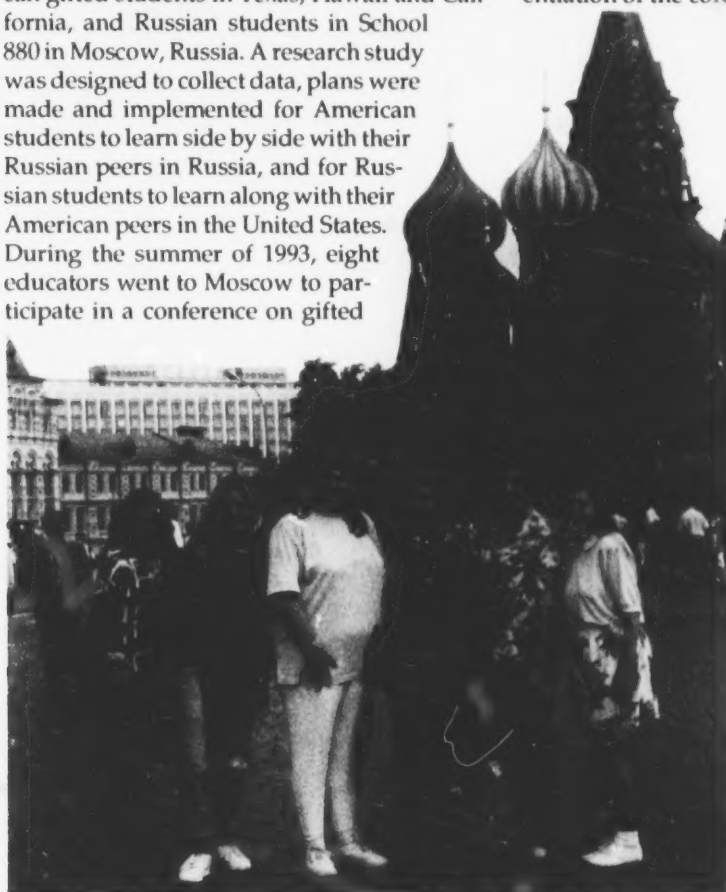
The success of this program has convinced me that gifted students in rural communities need the support of teachers, parents and administrators to develop curriculum options such as the Advanced Placement program which enables students to reach their full potential as students and as human beings.

Tim Guzik may be reached at Del Norte High School, 707/464-6141.

Visiting a Gifted Program in Moscow

by Sandra Kaplan, Melanie Crawford,
Katherine Gustin and Victoria Steinitz

In 1988, an International Curriculum project was initiated to determine how gifted students in the United States and Russia would react to the same differentiated thematic interdisciplinary curriculum. The project included American gifted students in Texas, Hawaii and California, and Russian students in School 880 in Moscow, Russia. A research study was designed to collect data, plans were made and implemented for American students to learn side by side with their Russian peers in Russia, and for Russian students to learn along with their American peers in the United States. During the summer of 1993, eight educators went to Moscow to participate in a conference on gifted



Evelyn Taramae, Jennifer Gould, Melanie Crawford, Victoria Steinitz, Sandy Kaplan and Katherine Gustin

Sandra Kaplan is the President of CAG. She may be reached at 213/740-3291.

Melanie Crawford, Katherine Gustin and Victoria Steinitz may be reached at Euclid Avenue School, 806 Euclid Ave., Los Angeles, CA 90023.

education and the differentiated thematic interdisciplinary curriculum. The conference included Americans and teachers from Russia and other republics of the former Soviet Union. Each of the American educators conducted a session during the conference, and some of them demonstrated lessons with classes of Russian children.

During the five years of this project, many changes have occurred in Russia that have influenced the project and the work of the principal investigators, Sandra Kaplan from the

United States and Natasha Schumakova from Russia. The Russian Department of Education sanctioned the formation of a school for gifted children which would be devoted to the thematic interdisciplinary curriculum and differentiation of the core curriculum. A population

of 125 gifted students attend this public school. The major fiscal support for the school is the government. However, parents and a business partner augment this support. The gifted students at this school are bound by standardized achievement tests and a national curriculum, but they also experience a thematic interdisciplinary curriculum that differentiates the core curriculum. Teachers in Russia are using the same thematic interdisciplinary curriculum which has been developed to differentiate learning for American gifted students. The students in both countries have studied *change, order, influences and power*. This year's theme is *adaptation*.

The major objective of the five-year study has been to examine the

similarities and differences between the perceptions of gifted American and Russian students toward these principles of differentiation:

- Learning about an important and big idea that includes many less important ideas. (thematic/interdisciplinary curriculum)
- Learning about the same topic in different content areas.
- Having people who are experts judge or criticize student work.
- Learning to share information the student has researched in new and different ways.

- Learning about new discoveries throughout the world.
- Learning about ideas that conflict or do not agree.
- Using different kinds of resources to find out something.
- Learning that studying one problem can lead to other problems for study.
- Learning how to solve a problem independently.
- Finding out how a person learns.
- Learning to be a leader.
- Using what is learned to help others.
- Learning how to evaluate or judge your own work.
- Learning that there are many different and right answers to the same problem.

Four attributes of perception defined by John Goodlad in his 1978 publication, *A Place Called School*, were used to define the students' perceptions toward the curriculum: difficulty, interest, importance and usefulness. The results from the study are extensive. Following are some of the findings.

1. Regardless of the item posed to the students on the questionnaire, American students agreed that the differentiated thematic interdisciplinary curriculum was not difficult. However, the Russian students consistently perceive the same curriculum as difficult.

One explanation of these results could be that American students believe that the difficulty of a task is correlated with intellectual capacity. If a student admits a task is difficult, that student may also feel that he is tacitly admitting that he is not an advanced or gifted learner. For some students, boasting about the ease of a task allows them to engage in the task without anxiety and without the pressure to achieve "like a gifted student." For some students, stating that a task is difficult is an expression of "need." The Russian students' statements that the tasks were difficult proceeded from their belief that "hard" work and "good" or "smart" students are synonymous terms. The Russian students expect school to require effort and they equate hard work with academic success. Acknowledgment of a task's difficulty reaffirmed their perceptions of themselves as good students.

2. Learning to be a leader and the development of interpersonal ability is integral to the differentiated thematic interdisciplinary curriculum. This was perceived by the Russians as difficult. Russian and American students agreed that this task was important and interesting; however, American students believed that the curricular experience was useful, while Russian students perceived little use for this same experience. This task brought out significant differences between the two cultures. Before the spread of the democratic system of government and the growth of a market economy in Russia, students did not view leadership skills as valuable or necessary. Interpersonal activities continue to play only a secondary role in the Russian curriculum today.

Russian students are serious learners. Beyond the wrinkled brows and quizzical gazes typical of gifted students everywhere when confronted with a complex problem, the Russian students ponder their solutions, incorporate sophisticated knowledge into their responses and challenge their peers' answers. The students are formal in their approach and



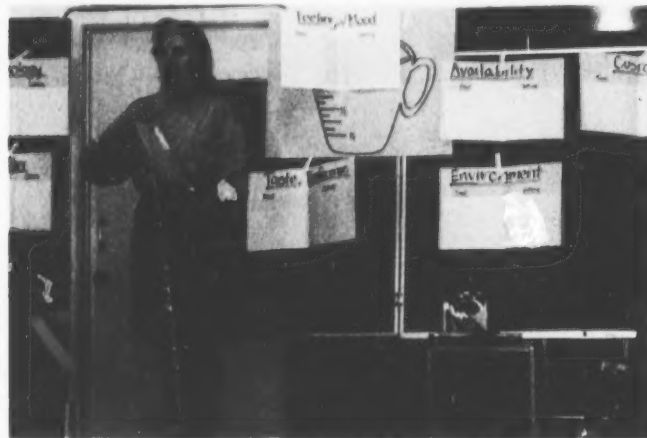
No differences in culture when it comes to line dancing taught to Russian students by Melanie Crawford.

response to learning. They raise their hands to participate in a discussion, stand when they present an idea and use formal language when they speak in class.

The greatest contrast between Russian and American gifted students, however, seems to be the extensive and advanced knowledge base of the Russian students and their self-directed attitude toward learning. It must be said that the Russian students seem better educated than

their American peers.

While it would be inappropriate to generalize about all Russian students from observation of the gifted students at School 880, the American visitors agreed that there was an innocence about these students that is not seen in their American counterparts. They have retained a childlike attitude and sense of wonder toward learning, even though their thinking processes, their vocabulary and their fund of knowledge is more sophisticated than that of American students. Some teachers felt that this innocence was a consequence of a more sheltered environment that has only recently been invaded by



Katherine Gustin teaches a thematic interdisciplinary lesson.

MTV, video games and other trappings of material success. A Department of Education official responsible for curriculum and instruction for all Russian schools commented that achievement scores of Russian children in the last two years had dropped substantially from the scores of previous years. He feels that the introduction of Western cultural ideas has had a negative impact on Russian children and their learning. It could also be suggested that the unsettled political and cultural conditions in Russia during the last few years has had serious consequences for students as well as adults.

The Russian students performed a concert for the American visitors. The exhibition of talent was most impressive. Like children in the United States, Russian children have access to a variety of private music, dance and art lessons. However, the Russian children also have access to community supported after-school and Saturday lessons and experiences. Originally developed as Pioneer Palaces and supported by the government, these centers are now privately operated by local educators. The Cre-

ative Center offers classes in drama, music, dance and art as well as science, sewing, ship-building and plant care. This extracurricular support of the arts enhances the importance of these areas and provides the students with experiences beyond those included in the core curriculum of the school. Talent development is valued and evidence of this was seen in the level of student skill and ease of performance during the concert. Student art, which was displayed in the corridors of the school and the center, was of exceptionally high quality. The Russian teachers exhibited collegiality beyond that usually found among teachers in American schools.

Perhaps this is because most teachers live in their school community, and their personal and professional lives are more closely linked than is usual in American schools. The teachers at the Constellation School for the Gifted don't perceive their responsibilities to the students and the school community as an 8 to 4 o'clock assignment. These teachers are committed to the goals of the school, to their colleagues and to their students as a major part of their lives, not just as a job. One American visitor felt that the close relationships among the Russian teachers

is a result of their acceptance that being a teacher means being involved fully in the school, in the daily life of the community and in the lives of their students and their families. One American teacher noted that Russian teachers seem to care for their students as parents care for their own children. The Russian culture values its children, and this is reflected in the interaction of teachers with the community and their students.

Perhaps the greatest similarity between American and Russian teachers was the kinds of problems both groups are concerned about solving. As one American teacher stated in surprise, "They're as worried about how to work with gifted children and their parents as we are!" The Russian teachers were very interested in how we conduct classes, write curriculum and work with parents, and they asked the same kind of questions that all teachers ask each other when they discuss education. There are universal concerns and interests that unite all teachers across cultures and distance.

T E C H N E T

A Picture is Worth a Thousand Words (Camcorders in the Classroom)

by Diana R. Alford

My interest in video production began during a teacher visitation to another middle school. I observed a classroom where students were actually excited about current events. Cooperative "news teams" and videotaping engaged these students in what was otherwise an admittedly unpopular topic. My students would rather watch paint dry than learn about current events.

Our school didn't own a camcorder, so with my principal's support, I wrote a proposal to our PTSA, who promptly granted the request. My technophobia disappeared when I discovered it took only about an hour to figure out how to use the camera. My students had the mechanics down in about ten minutes. The actual techniques of shooting took longer, but they found them enjoyable to learn and fun to practice.

The creation and videotaping of a news broadcast proved to me that it was possible to have students report on more than sports and the latest "R" rated movies. They enjoyed working in crews (another name for cooperative groups), and since everyone had a specific task to perform in order for the broadcast to be a success, they exhibited more responsibility with their assigned tasks, less slacking off and fewer instances of letting one crew member do all the work.

I soon noticed other benefits I hadn't observed in the school visitation. Videotaping the presentations and then watching them offered students immediate feedback on their presentation skills. They soon became acutely aware of not only what

they presented but *how* they presented. With video, presentation skills improved much faster than if we just discussed the presentations in class. They began to hear me when I mentioned that news anchors do not chew gum, wear hats, or roll their eyes. Topics such as voice speed, voice tone, voice clarity (some still found it difficult to talk through the rubber bands and retainers of middle school) took on a new meaning for students as they watched themselves race through a piece while no one in the audience could understand a word they said.

Kaye Black's *Kid Vid* opened for us the world of technical video production. We talked about types of shots and their use. We began to use storyboards and scripts in class. We experimented with video in other areas of the curriculum. Our productions took on a more professional appearance as we began using the technical language of video production. Scripting and storyboarding brought out new talents in my students which I hadn't previously observed. Visualizing a finished production was an important skill, and writing original scripts proved more difficult than just creating an article from two or three sources. Drawing for storyboards created a demand for artistic ability, often provided by those students ordinarily less than interested in writing.

I began to tape during other classroom activities. I noticed student behavior always improved with the camera in the room, even if it was off. I taped them working in groups and we talked about proper groupwork etiquette. Sometimes I let the camera run while I was presenting material to improve my own presentation skills. They began to ask, "Are we going to tape this assignment?" Taping any project improved the quality by at least 50%, even if we never watched the tape.

We branched out in our projects, and we were thrilled when a local TV station came out and did a piece on the video we created for the troops in the Persian Gulf. Our class had a video



Diana R. Alford is a teacher at Twin Peaks Middle School, 14640 Tierra Bonita Road, Poway, CA 92064.

pal class in Australia. I offered the opportunity for students to create projects with the school camcorder or with their family camcorder at home. I discovered videotaped interviews as a way to get students acquainted with each other during the first few weeks of school. Those interviews became the opening for my fall open house presentation. Nothing enchants parents more than seeing their child on TV.

How To

1. **Begin with a simple unit such as the basic interview.** Adjust the questions, answers and length of interview to the age level of the students.
2. **Operate the camera yourself the first time.** Let the students do the rest of the production, or combine with an older class and have them run the camera
3. **Divide the tasks.** Since there are two sides to video production, the technical side and the presentation side, combining with a class of older or younger students can be an exciting and rewarding experience for both.
4. **Bring in some professional interviews (sports are great).** Talk about interviewing and speaking skills. Watch professional interviews several times with the sound off and talk about the types of camera shots. Then turn the sound on and discuss the questions asked, the setting, voice and language (verbal and body) of the interviewer and guest.
5. **Discuss interviewing techniques.** Point out to students the manner in which the interviewer elicits answers to the questions and anticipates questions the television audience might have, as well as how the interviewer makes the guest feel comfortable (or perhaps not comfortable!). Discuss open-ended versus closed-ended questions. Have the students notice that a good interviewer does not interrupt the guest (a hard thing for students to avoid).
6. **Discuss audience.** Who will be watching this video, and what will that audience want to see and hear? Stress that video has two components, sound and sight. What they see must go with what they hear, and it must be visually pleasing and interesting to the audience. Video means movement. A shot

of more than ten seconds is rare (and boring), and most are two to three seconds long.

7. **Set up complementary teams.** When you begin work, pair students heterogeneously—boys with girls and the outgoing with the quiet. Taping, as students practice and having them watch these “rushes,” shows them quickly and effectively where they need to change.

8. **Design a set.** A convincing “set” for a news broadcast can be arranged easily in the classroom—a table, a wall map for background, some paper and pencils on the table to give the hands something official looking to do.

The Countdown

A crucial and often overlooked component of video production is the countdown. The first three to four seconds of the video will be cut off when the tape rolls back on itself. A proper countdown eliminates this problem. Standing to the side of the host and the guest so she can be seen by both but remain off camera, the floor director raises both hands in the air and begins the countdown. When she reaches “four” she begins to count silently on her fingers as the camera person releases the fade button and at the same time, turns on the camera. By the time the director has given the “take your cue” signal, roll back is completed and the entire production will be on the tape. When taping is finished the camera person again pushes the fade button, waits until the picture fades, then turns the camera off. These procedures prevent the end of the production from being cut off.

Pre-Production Check List

- ☐ Power source - AC adaptor or fully charged battery
- ☐ Video tape for each student - or a new tape for the class
- ☐ Tape in camera
- ☐ Lens cap off
- ☐ Camera on
- ☐ Check audio quality (especially important if you are using a mike)
- ☐ Check video quality - adjust tracking
- ☐ COUNTDOWN - “Script ready, guest

ready, audience ready, camera ready?
Quiet on the set! In, 10, 9, 8, 7, 6, 5, 4, 3, 2,
1, 0 - Take your cue!"

Video production has become a way of life in my room. The students are already interested and knowledgeable since most of them have watched 10,000 hours of TV by the time they are five. They are their own best critics. Finally, on

any hectic day, I have found no better way to quiet a room of active middle-schoolers than to say,

Camera ready?
Quiet on the set!
In 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0
Take your cue!

Supporting Talent Development is Only Half of the Answer: A Reexamination of Issues Raised in the September *Communicator*

by Barbara Clark

Opposing John Feldhusen is a bit like speaking against a national hero or a favorite teacher, for he is all the things you admire and want for a role model. There is never a doubt that he is sincere, thoughtful, caring, generous and enormously well intentioned. If the ideas he so passionately espouses were not so dangerous to a population that is already so badly underserved and so injurious to an important cause that has only recently made remarkable strides forward, one would be tempted to ignore his current pronouncements. However, the idea of abandoning advocacy for gifted children by replacing it with a call for talent development for all children cannot be ignored. So while it is necessary to put forward an opposing view and to clarify flawed arguments found in Feldhusen's recent writings in the September, 1993 *Communicator*, know that it is done as good educators always approach correction of behaviors, loving the person, just condemning the act.

Throughout the September issue are articles that editor Feldhusen has brought together to support the proposition that "identifying and developing talent in all children frees us from the problems of identification of the 'gifted few' and possible underrepresentation of special populations as well as the stigmatizing effects of the gifted label." Feldhusen would have us disregard the label we have given a

group of children with special needs, insisting that to give them another title that would include a much larger population of children would alter the low priority in which they are held and would generate more acceptance. It is true of this group that they seem too often to engender threat and negative attitudes among

"...children are not just gifted two hours a week, or after school, or during the summer, or when the resource room is available or when they are performing."

the very professionals who should be concerned for their welfare. However, a title change is unlikely to change these children or the characteristics that make them resist educational conformity. These children are not just gifted two hours a week, or after school, or during the summer, or when the resource room is available or when they are performing. They are not just gifted in problem solving or research or critical thinking. They may express their giftedness in ways that are social, emotional, intuitive, creative, or even unacceptable, but if given the chance, they will express their giftedness. It

is that chance, that opportunity, that is too often missing.

It is also true that no one can be against talent development or Renzulli's schoolwide enrichment. Everyone can support the development of talent for all children in every part of our planet. The fact remains that there are children who are already different, who by a favorable interaction of biology and environmental circumstance have developed unique needs. Their learning is different, their pace is different and their understanding of issues, content, relationships and innovation is different. These children are gifted. Advocates for gifted children can share a concern about the best possible education for all children without ignoring the specific needs of gifted children.

Perhaps it would clarify the discussion if we consider the definitions Feldhusen has used to differentiate the terms "gifted" and "talented." About the terms "gifted" and "giftedness" he says, "The concept of giftedness which emerged beginning with the work of Terman (1925) [author's emphasis]...viewed giftedness as a fixed, unitary trait manifested dichotomously." Of talent, he states, "Talents emerge from general ability as a combination of genetic dispositions, home and school experiences, and the student's unique interests and learning styles."

Of course Terman considered giftedness and intelligence as a fixed and unitary trait. Everyone in the 20s and 30s did. However, later in the 30s and into the 40s this idea of fixed intelligence was seriously questioned. It was not until the 60s that brain researchers (Diamond, 1988; Rosenzweig, 1966, 1984) began to produce powerful evidence that was to change the study of the nature of intelligence in ways that demanded that both intelligence and giftedness be redefined. Experience was then seen as an indispensable partner with heredity in the interaction that creates intelligence (Dobzansky, 1964; Rose, 1972; Thompson, Berger, & Berry, 1980). Evidence indicated that brain function can be enhanced as opportunities for stimulation in the environment are enriched. The inheritance provided by the genes was not found to limit the intellectual development, but only to direct a unique pattern of development, with the ultimate potential still unknown (Diamond, 1988, 1993; Hutchinson, 1986). The interdependent biological and experiential undergirding for any definition of intelligence, and giftedness, the label we use for high levels of development of intelligence, can no longer be denied.

The myriad ways that intelligence can be expressed are defined by the uniqueness and multifaceted nature of the brain itself.

Guilford (1967) was another whose ideas must be acknowledged in a discussion of how beliefs have changed about intelligence and giftedness. It was through his insight that intelligence began to be seen as more than a one dimensional concept and took on the many sided view that writers such as Gardner (1983) and Sternberg (1985) propose in their work.

As a result, definitions of giftedness have been developed that allow identification of more than just cognitive and academic ability and include creativity, leadership, and performing and visual arts abilities. First recognized by Marland (1972) in a report to the Congress of the United States, such diversity is now commonly a part of definitions accepted throughout the United States and in many other countries. The practice of questioning the terms, such as giftedness, used to discuss high intelligence, or seeing them as limited, as Feldhusen does, can no longer be considered valid.

Giftedness may now be defined as a biologically rooted concept that serves as a label for a high level of intelligence, able to be enhanced or inhibited by the interaction between the genetic pattern and the opportunities provided by the environment. The label "gifted" indicates an advanced and accelerated development of functions within the brain, including physical sensing, emotions, cognition and intuition, and it may be expressed through abilities such as those involved in creativity, academic aptitude, leadership or the visual and performing arts. Gifted individuals are those who perform or show promise of performing at high levels in such areas and who, because of such advanced and accelerated development, require services or activities not ordinarily provided by the schools in order to develop their capability more fully. This definition has been used since the 70s (Clark, 1992) and is quite different from the narrow definition Feldhusen would have you accept as a rationale for the need to replace gifted education with talent development when he declares, "School programs must undergo change from traditional conceptions of the gifted few which favor select subgroups or populations and concentrate efforts instead on finding and nurturing special talents and abilities among all youth." The definitions now used for intelligence and giftedness sound very much like the definition Feldhusen is using for talent.

As to Feldhusen's concern that "large seg-

ments of some minority, economically disadvantaged, and culturally different populations are not represented in programs for the gifted and talented," that has been a concern for many programs at federal, state, and district levels, and a great deal of effort and money is being spent to remediate this concern. There is a problem with combining minority and culturally different populations with the economically disadvantaged, since, although there may be some overlap, these groups do not comprise a single population with a single solution available. There are, in fact, culturally different groups that are not underrepresented but are actually overrepresented in gifted and talented programs. Even if only the economically disadvantaged segments of the population are to be considered, to say that the cause is that "the conception of giftedness used most often in programs for the gifted conceptualizes human abilities as synthesized in a general unitary ability" and, therefore, works only for the "favored" populations is not justified. Further, to say that using "talent development" instead will "suggest a more analytical and more diverse view of human abilities, abilities which may be nurtured and aptitudes which are amenable to development" not only disregards the evolution of the concepts of intelligence and giftedness, but more importantly fails to recognize a far more serious problem. We now know that intelligence, however it is expressed, cannot be developed in a vacuum. It must be carefully nurtured, for if the functions of the brain cannot progress, they will regress. This precious giftedness is malleable, and it is dynamic. We must use it or lose it! Any human being, who, for whatever reason, does not have the opportunity to appropriately stimulate the abilities with which he or she was endowed will not develop those abilities to high levels. We would be better served to face the restricted environmental opportunities that poverty presents to too many of our children and try to change those limitations of opportunity than to develop a specious argument that seems to frame the problem in a way that could be remediated by the simple expedient of changing a name.

Feldhusen, as his scholarship, experience and generally kind nature would dictate, has expressed many valuable ideas and concerns. We *should* be concerned about many of the limitations now placed on the children for whom we advocate as well as all of the children of our nation. We would be well advised, as Feldhusen says, to "have wedded two programs, gifted

education and talent development, into one more potentially effective and acceptable program." We have such a program now, and it is called Gifted and Talented Education. We must not limit our efforts, as he contends, in order to "focus our instructional expertise on the search for talent and on fostering talent for all youth..."

This is a time when we are about to receive an updated national report that carries a plea for more and earlier opportunities for gifted and talented students, more training for our teachers and more awareness on the part of our

*"We now know that intelligence,
however it is expressed, cannot be
developed in a vacuum."*

decision makers as to the educational needs of these gifted children. It is a time when the National Education Association has just passed a resolution supporting a national interest and commitment to appropriate education for gifted and talented children as part of the national educational reform movement. It is a time when we have in the White House a President who was one of the first to add his name to the Advisory Committee for the National Association for Gifted Children and publicly uses the term openly and with positive regard. It is also a time when, at the end of summer 1993, representatives from countries all over the world met as a World Council for Gifted and Talented Children. At this meeting the delegates from over 35 countries were asked to change the name of their journal in a way that would replace the term "gifted" with the words "talent development," and they chose to reject the suggestion, in part because they did not feel it represented the children they served. Surely we have other, more useful ways to expend our energy and time than in changing our name.

While all who advocate for gifted and talented children must continue to be committed to quality education for all the children of this nation, indeed this world, and we must seek better solutions for the problems that face education today, we cannot abandon the unique needs of the gifted and talented children. The changes we must make and the solutions we must find for these children will be difficult, and finding ways to foster the gifts and talents in all children must be a part of that agenda. These are serious and immediate problems and

will require all of our energy, all of our creative abilities and all of our vision.

References

- Clark, B. (1992). *Growing up gifted*, (4th ed.) New York: Merrill/Macmillan.
- Davies, P. (1984). The eleventh dimension. *Science Digest*, 92 (1), 72; 105.
- Diamond, M. (1988). *Enriching heredity: The impact of the environment on the anatomy of the brain*. New York: The Free Press.
- Diamond, M. (1993, July). Lecture on brain development, presented at The Developing Brain: New Frontiers of Research Conference, University of California, Los Angeles.
- Dobzansky, T. (1964). *Heredity and the nature of man*. New York: New American Library.
- Gardner, H. (1983). *Frames of mind*. New York: Basic Books.
- Guilford, J.P. (1967). *The nature of human intelligence*. New York: McGraw-Hill.
- Hutchinson, M. (1986). *Megabrain*. New York: Simon & Schuster.
- Marland, S. Jr. (1972). *Education of the gifted and talented*. Report to the Congress of the United States by the U.S. Commissioner of Education. Washington, D.C.: U.S. Government Printing Office.
- Rose, K. (1972). Environmental effects on brain and behavior. In K. Richardson & D. Spears (Eds.), *Race, culture and intelligence*. Baltimore, MD: Penguin.
- Rosenzweig, M. (1966). Environmental complexity, cerebral change and behavior. *American Psychologist*, 21, 321-332.
- Sternberg, R. (1985). *Beyond IQ: A triarchic Theory of Human Intelligence*. Cambridge, MA: Cambridge University Press.
- Terman, L. (Ed.) (1925) *Genetic Studies of Genius (Vols. I-V)*. Stanford, CA: Stanford University Press.
- Thompson, R., Berger, T., & Berry, S. (1980) An introduction to the anatomy, physiology and chemistry of the brain. In M. Wittrock, (Ed.), *The brain and psychology*. New York: Academic Press

Barbara Clark is president of the National Association for Gifted Children. She may be reached at the Department of Education, California State University at Los Angeles, 5151 State University Drive, Los Angeles, CA 90032.

Imagine. . . No Race, No Color, No Looks

If we had no race, no color, no looks,
Would Martin Luther King be in our history books?
Would we know Emmett Louis Till by name?
His killing was such a shame.
Would Rosa Parks be known to us?
Or would she be just a woman sitting where she pleases on a bus?

If we had no race, no color, no looks,
I couldn't judge you by what I see.
I would get to know you and that's better for me.
I couldn't prejudge you or stereotype you at all.
I wouldn't know whether you're short or tall.
I would have no fears lingering inside.
There would be nothing to be afraid of on the outside.

Why can't our world be this way.
Why do I have to imagine this, I say.
We should be together as one,
Not classify ourselves and others.
All I can do is hope and pray,
Why can't our world simply be this way?

Courtney Garmon, Grade 7
Cabrillo Middle School, Ventura

Learning Differences: A Primer for Parents

by Madeleine D. Brandli and Kathleen Pommer

One of the most frustrating situations for parents is to be faced with the challenges of a gifted child who is not achieving in the school environment. What may come to mind are descriptives such as lazy, unmotivated, careless, distracted, or not working to potential. What may be overlooked and underestimated in the existence of learning and/or attentional disorders which the child cannot overcome or compensate for, in spite of high intellectual potential. Genetics and physiological factors place a certain portion of the population at risk for developing learning problems, and environmental influences have profound effects. According to Daniel Hallahan of the University of Virginia, the social/cultural changes of the past few decades may account in part for the perceived rise in the prevalence of learning disabilities. He cites the increased risk of biomedical damage to the central nervous system resulting from poverty, poor nutrition and substance abuse. Even in more affluent segments of society, Hallahan notes a decrease in the amount of social support available to children (parent/child learning time) due to television, organized athletics/after-school activities and the hours lost in transportation, the "phenomenon of children as commuters."

Criteria for the legal identification of learning disabilities rarely fit a child identified as gifted, yet a similar, or even more extreme discrepancy between potential and achievement may exist. What then can parents do to ensure the educational progress and psychological well-being of such a child? Prevention, identification, accommodations and advocacy can serve as steps to bridging the gap between weaknesses and strengths, between failure and success.

Prevention

Medical research continues to document the direct cause and effect relationship between repeated ear infections during infancy and persistent language impairments in such children. Allergies are often associated with infections, and in both cases, the resultant obstruction to normal sound can permanently alter and delay development in the language centers of the

brain. Auditory perceptual processing problems may result. This is not a hearing loss, but rather a problem with the processing of information received through the ears. As a result, a child may also experience difficulty with rote memory and sequencing. Basic learning activities such as reading, handwriting, spelling, and arithmetic all require memory and step-by-step sequential processing. A new test called the Early Language Milestone Test (ELM) can be given to infants and toddlers by pediatricians to



detect problems while they are still correctable. The Learning Disabilities Association of California has reported that a significant percentage of toddlers who experienced delayed language also go on to develop some type of language-based learning disability. Early recognition and treatment are highly successful.

Other relatively common medical conditions which interfere with learning directly or by complications of medications include allergies, asthma (the leading cause of school absence) and thyroid disorder. Dr. Boris Catz, a thyroid specialist in Beverly Hills, CA, notes that low thyroid function can be a cause of poor memory and other learning problems and is aggravated in times of stress (i.e., tests, a new class or school). A thorough medical exam by a physician tuned into developmental and medically related learning problems can be very helpful. In the case of children with ADHD (Attention Deficit Hyperactivity Disorder), the pediatrician can serve as advisor to the par-

ents/teacher and advocate for the child in dealing with the school system.

Identification

Parents can be more effective in meeting the challenges of learning problems if they become intimately familiar with various measures of learning and personality styles and seek out such information about their children. A test measuring sensory modality, such as VAKT (for visual, auditory, kinesthetic, tactile), administered by a school psychologist or other professional, can provide parents and teachers with invaluable insight into how a child acquires and manipulates information, defining weak vs. strong channels for processing. Children, gifted or otherwise, rarely, if ever, choose to selectively fail. Parents can begin to recognize, and teach their children as they mature, why one type of learning activity meets with failure and another meets with success. Self-understanding promotes self-acceptance and growth.

A wealth of guidance for families and teachers who strive to help bright, poorly achieving students succeed is available. Of particular note are *Smart Kids with School Problems* by Patricia Vail and *To Be Gifted and Learning Disabled* by Susan Baum, Steve Owen and John Dixon. Both books contain sections on how to interpret information provided on the subtests of the WISC-R, a test commonly given to students as part of the gifted identification process. The test must be administered by a licensed professional; the results can be analyzed by a knowledgeable parent or teacher to gain extremely useful information about discrepancies among the various subtests. Gifted children with learning disabilities, as well as some with attentional disorders, frequently show striking, extreme discrepancies in their patterns of strengths and weaknesses. These can be compared with information from the VAKT or other sensory modality tests for an even clearer learning portrait.

Difficulties in sustaining or focusing attention have been the subject of research for many years, most of which supports differences in brain function as a significant factor. New research now also links genetic thyroid hormone dysfunction to hyperactivity in some ADHD populations. Because of strong compensatory abilities, the diagnosis of ADHD may not be made until third or fourth grade in some gifted children, according to Dr. Martin Baren, a developmental pediatrician in Orange, CA. Those with attentional disorders who are not hyperactive (ADD) may not ever be identified, yet will

suffer from similar learning problems related to inattention. Without help, many of these children experience school failure and loss of self-esteem, with problems persisting into adulthood. For the school-age child up to age ten, Dr. Dorothy Davies Johnson, MD, FASP, has written a common sense, easy to understand guide for parents and teachers entitled *I Can't Sit Still: Educating and Affirming Inattentive and Hyperactive Children*. Her advice is reassuring and positive, empowering parents and teachers with concrete and specific suggestions.

In addition to the above information, teachers, parents and children alike benefit from identifying and understanding the powerful impact of personality and temperament differ-

"Parents who require silence and a desk to read may not grasp the legitimacy of their child's need to study curled up on a beanbag with a lap desk and music in the background."

ences on family and peer relationships, as well as teacher-student interactions. What may be a subtle learning difficulty in one classroom may become a serious failure situation in another when stressed by a combination of teaching styles/expectations and personality mismatches. Early bird parents may wonder why their night owl child does not perform well in a first period math class. Parents who require silence and a desk to read may not grasp the legitimacy of their child's need to study curled up on a beanbag with a lap desk and music in the background. The closer a child is to the edge of his/her ability to compensate for learning differences or to adapt to teacher/parent expectations, the more likely are personality and other factors to influence success or failure. *Please Understand Me* by Keirsey and Bates offers an informative and accessible introduction to the world of personality and temperament with an approach based on the acceptance and celebration of differences.

Accommodations

The myth of the gifted assures us that such children do not require special help—they will get it on their own. For a gifted child with

learning differences, this attitude spells disaster. For such a child the label "gifted" may actually prevent access to the learning accommodations available to other students. Armed with knowledge about their children's learning strengths and weaknesses, parents can explore all types of learning strategies with their children and their teachers, using as many approaches as necessary for success. Developmental experts stress the use of more than one sensory channel for best results.

Many children with learning differences suffer from problems in memorization. Memory aids may include color coding and highlighting, mnemonics, rhyming, music, dancing, sand-paper tracing. (How many of us learned how to spell "encyclopedia" from Jiminy Cricket?) Dr. Baren notes that some children will never be able to spell well or consistently remember math facts or multiplication tables. Arthur Bornstein of the Bornstein School of Memory in West Los Angeles has developed an intriguing math memory technique called "Multiplication Memorizer Method." He uses highly imaginative story pictures and other creative techniques to enhance memory.

Of all traits considered difficult to deal with in home and school learning environments, lack of organization seems to create the most havoc. A highly organized child is a rare and much sought after group member in a gifted classroom. Children with learning difficulties and attentional disorders seem to have the most difficulty, and those with ADHD/ADD are also typically delayed in their development of organizational abilities. With teacher and parent cooperation, learning planners/organizers are extremely effective, especially those involving the entire classroom. Wristwatches with alarms, color-coded book covers and binders matched to teachers' files, and cubby holes for each student for all home-bound papers help keep students on track.

Long-term and large-scale projects and assignments require special planning. Dividing them into smaller sections of time or content is essential. Global, nonsequential thinkers (the majority of gifted students) may need to begin in the middle and work outward, since they may not be able to do a sequential outline. Mind mapping, semantic webbing and other nontraditional note-taking techniques should be taught in addition to typical outline formats. Colored posterboard and Post-It notes make an easy system for visually-kinesthetically organizing ideas for a paper or project. Copies of

reference and research quotations can also be used in this way to create a project framework. Parents can work with their children at home to develop these skills, even if the overburdened classroom teacher cannot integrate them into the classroom schedule.

Intractable handwriting, deficient grammar and poor spelling are red alerts for parents and teachers to provide children with early access to word processors with spell checkers and grammar checkers. These computer applications teach without recriminations, demand immediate feedback and provide positive reinforcement! As a confidence booster, many children with unreadable penmanship can be taught to

"Failure is not so threatening when viewed in the perspective of work analyzed for improvement. Instead of 'I can/I can't' this type of assessment is the more developmentally appropriate 'I can/I can't yet' model."

do beautiful calligraphy, testimony to the different brain systems employed. Large-scale graph paper works wonders for lining up arithmetic problems for young children with visual-spatial processing difficulty. After the primary grades, calculators should also be considered as part of regular school supplies, especially for children with poor rote memory. Portable notebook computers and other high technology aids such as graphing calculators are fast becoming standard, even required, equipment in colleges and businesses. In bypassing the mechanical output problems associated with learning, memory and expressive difficulties, these devices permit students to concentrate on and achieve at far higher levels of learning and performance.

The process of evaluating a child's growth and achievement by methods in addition to traditional grades can be a learning tool in itself for students and a self-confidence builder. The Portfolio Assessment method encourages teachers and students to use tangible visible records of growth and is superior to more traditional grading systems in many ways. Children evaluate their own papers and decide where improvement and change are needed and the rea-

sons for this decision. Throughout the year they keep track of their progress by evaluating similar work. They review comments from teachers on past work before submitting the next assignment. This method teaches children the skills of self-analysis and interpretation and how to identify their own growth. If a child can see that growth occurs as a result of quality practice (not just repetition), confidence builds. Failure is not so threatening when viewed in the perspective of work analyzed for improvement. Instead of "I can/I can't" this type of assessment is the more developmentally appropriate "I can/I can't yet" model.

Advocacy

Gifted children with learning difficulties have few advocates in the typical school environment. Described by Priscilla Vail as the "double mask," the gifts frequently mask the disabilities, or the disabilities hide the gifts. In both circumstances, the child suffers a loss of confidence and self-esteem. Parents are often the only buffer children have against inappropriate placement or expectations arising from unidentified learning differences/disabilities. Giftedness demands its own advocacy; learning differences double the burden.

Conclusion

The special needs of a child with both exceptional gifts and learning differences present parents with learning challenges of their own. The references listed provide parents with basic information to begin to meet those challenges—a primer for action. Success is attainable. The prescription includes prevention when possible, acceptance and identification at an early age, a commitment to accommodations based on extensive knowledge and assessment, and vigorous long-term advocacy.

References and Resources

- Baren, Martin, M.D. 805 W. LaVeta, Suite #210, Orange, CA 92668. Personal Interview.
- Baum, S. Owen & Dixon, J. (1991) *To be gifted and learning disabled*. Mansfield Center, CT: Creative Learning Press, Inc.
- Bornstein School of Memory, 11699 San Vicente Blvd., West Los Angeles, CA 90049.
- Catz, Boris, M.D. 435 N. Roxbury Dr., Beverly Hills, CA. Personal Communication.

Hallahan, D. (1992) Some thoughts on why the prevalence of learning disabilities has increased. *Journal of Learning Disabilities*, 25, 523-528.

Johnson, D. (1991) *I can't sit still: Educating and affirming inattentive and hyperactive children*. Santa Cruz, CA: ETR Associates.

Keirse, D. & Bates, M. (1984) *Please understand me*. Del Mar, CA: Prometheus Nemesis Book Company

Mason, K. (1991). *Going beyond words: The art and practice of visual thinking*. Tucson, AZ: The Zephyr Press.

McCarthy, B. (1987) *The 4MAT system: Teaching to learning styles with right/left mode techniques*. Barrington, IL: EXCEL, Inc.

Orange County Chapter, LDA-CA. (1992). *A child's first words*. Videocassette.

Stern, L. (1993). New test for speech and hearing problems. *Woman's Day*, May 18, 30.

Vail, P. (1987). *Smart kids with school problems: Things to know and ways to help*. New York: E.P. Dutton.

Madeleine Brandli is a GATE parent/consultant. She can be reached at 19015 Croyden Terrace, Irvine, CA 92715. Kathleen Pommer is a clinical psychologist and teaches a GATE class in the Irvine Unified School District. She may be reached at 32266 Via Del Nido, Trabuco Canyon, CA 92679

Future Issues

Spring issues for the *Communicator* will feature the following topics:

Language Arts for Gifted Students - April

Identifying the Gifted Student - June

Submit articles to Jean Drum, *Communicator* Editor, 7822 Belgrave Avenue, Garden Grove, CA 92641.

CAG Scholarship Winner - Tylene Pommer

A letter from Tylene Pommer

One of the CAG scholarships for 1993 went to Tylene Pommer of Irvine, who has had science as a passion since her earliest school years. Her list of honors and achievements is distinctly impressive (also varied—it includes St. Bernard raising and drill team/dance team as well as a host of chemistry related projects).

Dear Mr. DeVries and the CAG Board,
Again, I would like to thank you for allowing me, through your generous scholarship, to continue my work in biochemistry and the effects that man-made pollutants have on our environment.

Because of your generosity I was able to complete another phase of my research. While ignorance may be the most expensive aspect of life, education does not come cheap either, and this project was no exception.

My project is **Metallic Death: Acute Toxic Effects of Heavy Metal Pollutants of the Escherichia Coli Bacteria in our Sanitary Waste Treatment System**. My question for this phase of the project was *what are the concentration levels (Mg/L) of heavy metals in industrial waste water that will injure the E. coli bacteria*, and it was answered quite successfully.

The toxic effect of industrial heavy metal on the coliform bacteria in our sanitary waste treatment system was investigated in this phase. Sewage samples, containing coliform bacteria, were obtained from the Irvine Ranch Water District's Michelson Waste Treatment Plant. Standards of the common industrial heavy metals, cadmium, chromium, copper, lead, nickel, silver, zinc and cyanide (gold) were prepared in concentrations of 2 mg/L, 20 mg/L, 2,000 mg/L and 20,000 mg/L (later diluted 50%). Media of Lauryl Tryptose Broth (LTB) was prepared for sewage fermentation. Duplicate sets of samples containing 10 ml of metal standards and 10 ml of sewage were mixed in test tubes and allowed to stay in contact four hours. Vials were inverted into fermentation test tubes and filled with 10 ml of LTB and

sterilized. Duplicate fermentation tubes were inoculated for 48 hours at 35 degrees C. The injury effect on the coliform bacteria was observed by looking for trapped CO₂ inside the vials. Results showed that increased levels for all heavy metals except lead had a mortal effect on the bacteria.

In my experiment I found that the heavy metal concentration, higher than the allowed discharge limit, acutely affected the coliform bacteria. Lead was the exception. This was an unexpected result to me, since humans are so adversely affected by lead. Silver, on the other hand, killed the bacteria at concentrations of 100 mg/L and above. In fact, I even retested silver because it was so much lower than I expected.

Copper, cyanide and nickel killed the bacteria at concentrations of 1,000 mg/L and above. Cadmium, chromium and zinc killed the bacteria at concentrations of 10,000 mg/L.

From my research in the early phase of the project, I know that the embryonic life in the marine environment is easily injured by toxic heavy metals.

What I didn't know was that an industrial spill, releasing metal concentrations as low as 100 mg/L could acutely affect the coliform bacteria in the sewage treatment system. A spill like this would result in a public health risk, with raw sewage released into the environment, and it could have the potential for great injury to the marine life.

This phase of the research is crucial to any further developments.

Without the help of the CAG board my dream to complete this phase would never have been realized. Your generous contribution for the furthering of scientific research has made it a reality. Equipment and chemicals are beyond my working budget. Before the reality comes the dream. Thank you so much for making the dream become *my* reality. I am anxious to begin the next phase of this research and I will continue to let you know the progress.



Tylene Pommer, CAG scholarship award winner

Ann Cierley was in charge of formulating and planning the Summer Seminar and making the many arrangements. It owes its existence to her hard work, gifted thinking and persistence. When an injury sidelined Ann for the month of July, Janis Van Dreal stepped in and took over the on-site administration with enthusiasm and skill.

ness, science, government, academia and the visual and performing arts.

During the rigorous two-week program, students participated in activities ranging from DNA extraction and manipulation labs to theater sports; from "great minds" role-playing to Flamenco lessons; and from an Athenian Forum on Plato's *Republic* to artistic performances. As a culmination, small groups designed and presented their own Utopias for California in the year 2020.

The fast-paced curriculum introduced stu-

rageously funny. Science was also nature walks, an evening spent listening to nature's music and enjoying the exclusive use of Westmont's observatory. Science was discovering both the power of modern technology and the wonder of our own humble place in the universe.

Participants studied and applied social studies by learning about California firsthand from elected officials, business leaders and representatives of nonprofit agencies. Since all participants had a vested interest in California's future, there was a true need to understand cur-

Thoughts from the Summer Seminar

masquerade

all the world's a stage
do you take off a mask to act
or wear the new identity?
the shield and safety
in constantly acting
protect me from the pain.
barriers are built
all for the sake of self.
do you choose the mask,
or does it decide who you are?
the world lies behind the mask.
your hidden self is allowed to be,
but make sure you can distinguish
between shell and that
which lies deep inside.
the greatest pain
the greatest lesson
the greatest love
is when the chrysalis is broken
the butterfly emerges,
the leaf supports the butterfly,
which learns to dance in the sun.

Emilyann Ritzman

Life is unlike a freeway.
It is not necessary to speed up to
Others to get on track.
Instead, close your eyes and progress at
Your own pace.
Only then will life's trip have meaning.

Amanda Kaplan

Clear Glass is shining in the sun.
Scratched glass is hard to see through.
Broken glass looks like cobwebs.
Maybe we should stop looking through glass.
Anonymous (by Ben)

While my world comes crumbling
down around me,
I stand Tall though weak in the knees.
Kimberly Crawford

dents to new concepts and subjects in an environment which encouraged teamwork as well as individual risk. Students were presented with challenges which demanded thoughtful, researched responses and with experiences which required participation and exploration.

Science for seminar participants was not facts and formulas. It was conducting experiments, drawing conclusions and making ethical choices. It was having a working geneticist as a team teacher in a lab to alter simple DNA. It was listening to presentations on superconductivity and virtual reality and learning that university professors and scientists are not ivory tower "nerds" but are warm, down-to-earth and out-

rent problems and projections. Listening to others and understanding diverse viewpoints became essential to the challenge of solving our problems. Social studies was not learning history; it was facing the present and forming the future.

Underlying all subject areas was a study of Humanities. The classical philosophers have always struggled with definitions of truth, beauty and ideal societies. In addition to guest lecturers from UC Santa Barbara, students themselves became guest presenters, taking on the roles of philosophers such as Aristotle, Plato, Spinoza, Berkeley and Locke to argue their points on given topics. Seminar students

strongly identified with the ongoing challenge of humans to discover themselves and define their environment. Philosophy became a powerful tool for learning acceptance of self and of others. Ultimately, seminar participants learned that learning is a vital, creative process, a necessary tool for forming opinions, making choices, solving problems and making an impact on others.

"Philosophy is so incredible. Now I can read to explore my own ideas."

"The philosophical studies...allowed me to extend my factual information into a logical and orderly backboard that I could stand against."

"There was no right or wrong—your mind was spinning 360 degrees."

The Staff

The key to creating this exciting learning environment was, of course, the teaching staff. Four exemplary instructors shared their expertise and themselves in classes, at meals and during recreation times. They were historian Mike Arburn from Oak Ridge High School in the El Dorado UHSD, Jerry Chris from Mission Viejo whose area is philosophy and communication, Scott Zraggen, chemist and biologist from Vacaville High School, and Mike Hctor of La Quinta High School in Garden Grove who is an actor, graphic artist and theater arts instructor. Their range of experience and perspective was invaluable in making the program both broad and deep. Though the curriculum

was intellectually demanding, these teachers skillfully arranged activities and grouped students to make interpersonal demands as well as to be ready with support when it was needed.

In addition to the four teachers, two residential counselors (also credentialed teachers) participated in lessons and supervised students at meals and in the dormitory. Like the rest of the staff, they shared a genuine concern for young people and a willingness to interact on a personal level.

All staff served as role models, often participating in sessions along with students and facilitating an atmosphere of mutual respect. It was natural for students to address staff members by first names. Students became aware of learning as a process of personal as well as intellectual growth, and they were nurtured in this process.

"I liked the staff who made this seminar the best one I've been to in my whole life. They were all funny, warm and treated us as intelligent and clever adults."

"The teachers really opened up and were real living people. They breathed their life where we could see it. If school were always that way, life would be really different."

"Having great teachers who can relate to you on a more personal level added to the experience in a way that can't even be described."

"I like the philosophical debates and the fact that I could share my opinions. That it was okay to have opinions. I like the way people accepted me for who I was."

Awareness of Self

The greatest outcome of the CAG Summer Seminar was not the new knowledge of DNA, philosophy, theater or politics. It was the self-awareness and self-acceptance that serves as a basis for all future learning. Not one participant—teen or adult—was the same at the end of the two week program.

Personal insights were sometimes painful, but increased awareness of self led to an appreciation and acceptance of others that is critical to easing the transition from adolescence to adulthood.

"I've learned that I can open up. I think I will be more expressive and not so shy."



Jeffrey O'Neal, Sr. Research Assistant Cal Gene, Bethany Nettifce and Emilyann Ritzman in Genetic Manipulation Lab

"I have learned more about myself in that I see my goals more clearly. I also have intensified my desire to reach them. I have seen that there is much more to learn and that it is OK to be imperfect. This was a wonderful experience."

"Talking with others and hearing their viewpoints has helped me see how much my world or anyone's can have an impact on something...now I look at some things differently, from many points of view."

"I've learned how to pull off my mask and interact more freely with others. Before I came here, I was a bit of a conformist and did what other people like....I need to make time each day to be myself."

Acceptance of Others

Basic to the success of the seminar was that students learned from each other as well as from seminar studies. Too often gifted adolescents are without true peers. The very gifts which make them unique can also leave them isolated.

By creating a gathering of intellectual peers, the CAG Summer Seminar allowed for social and personal growth unprecedented for most participants. An atmosphere of risk taking was carefully nurtured and modeled by staff, and students thrived on being themselves.

Over the course of the two-week program, strong bonds and supporting relationships were formed. Acceptance of self led to acceptance of



Ben Ellenberger and Melanie Holm work together in the lab

others. What one student had nicknamed "nerd camp" before arrival, soon became "family."

"I liked the time we had...just to talk and reflect and absorb all that we were exposed to."

"I've learned there are still people I can trust in

the world and I met 28 of them here."

"What I liked best was the people. Everyone's open mind. Questions and answers. All my experiences. All my new friends."

"I learned to treat people as if they count, because we all do."

"The kids here are individual, independent thinkers with strong voices and opinions."

Making a Difference

It is a goal of all education to prepare students for productive, personally fulfilling lives. But we have a special interest in encouraging gifted individuals to become involved in shaping the future.

The ultimate outcome of CAG Summer Seminar 1993 was to make students aware of societal issues which directly affect them. This was coupled with an increased self-awareness and the confidence that each of us can and should make a difference. That it all occurred in a learning environment which was as much fun as it was demanding is the definition of "school" for which we all strive.

"After visualizing California in the future and learning about what I can do, I feel a stronger tie to it. Before coming, had I only known the problems, I would have thought, 'Gee, I should move to Maine.' But now that I feel I can really help and make a difference, I will go back home knowing I won't abandon or run away from the problems I know can be put right if we try."

"I have seen different points of view and have learned how to try to incorporate them into one idea that we can all agree on."

"To look to the future you need to know about yourself and this camp allows you to find yourself. You look deep inside."

"I have learned many facts and lots of information about California now and projections about its future, but most important, I think I have learned ideas."

CAG Summer Seminar 1993

Program Summary

The theme for the two weeks was "California in the 21st Century." Within that theme, the following sub-themes were explored.

Diversity

- Activities: Exploring personal views, diversity
Overview of projected realities (stats) for California
Reading: *The Tao of Pooh*
Video: *Zoot Suit*
Diversity Walk: Architecture and biology of camp
Diversity Lab: Microscopes and pond water
- Speakers: Gil Garcia, Santa Barbara City Councilman/ Architect, "Latino/Hispanic Issues"
Hymon Johnson, UC Santa Barbara, "Diversity and Connectedness"

Metamorphoses

- Activities: Library Research - Truths/ideas through history
Theater Games
Debate: Great Ideas
Exploration: Questions about California's future
- Speakers: Peggy Good-Cordero, Adm. Asst. to Sen. Gary Hart, "Political and Social Issues in California's Future"
Stephen Marcus, UC Santa Barbara, "Virtual Reality"

Manipulation of the Environment

- Activities: Computer - SimEarth: The Living Earth Computer Game
Acid Rain Simulation/Lab
"Music in the Woods" - nature walk and evening at the observatory
- Speakers: Panel on Environmental and Development Issues in California
Joe Fontaine, past President, Sierra Club
Linda Krop, Environmental Defense Center
John Martin, Developer, past President, BIA
Tom Carey, Developer
Roy Shults, University of California Regent, "Future of Higher Education in California"

Manipulation and Power

- Activities: Art
Animation; students create animated videos
Genetic manipulation lab
- Speaker: Jeffrey O'Neal, Sr. Research Assistant CalGene "Genetic Engineering and California Agriculture"

Power

- Activities: DNA Bacterial Transformations: Students selected traits in their "children," but discovered that chosen strengths come with unexpected weaknesses
Reading: Plato's *Republic*
Discussion of Athenian Forum
Transactional Analysis: Power of Role Playing
Slides and Discussion: Eastern and Western cultures
Machiavelli Power Play: students take roles of historical personalities
- Speaker: Ken Kihlstrom, Physicist "Superconductivity"

Power and the Future

- Activities: Utopia Project: What should California be in the future?
- Speakers: Billie Bowen, caricaturist
Lesson in caricatures: capturing a person's essence (she also did a caricature of each student)
Sandra Kaplan, CAG President, and other women, "Being Female and Gifted"

The Future

- Activities: Presentation of Projects

The following special cultural events also occurred during the seminar.

Piano recital by Dr. Robert Haag
Bilingual dance workshop with Ms. Rosemary Cruz
Santa Barbara "Art Walk"
Santa Barbara Mission
Santa Barbara Museum of Art
Santa Barbara Courthouse

Janis Van Dreal may be reached at West High School in Bakersfield, CA 805/832-2822.

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Please share this copy of the *Communicator* with a friend when you have finished reading it. He or she might like to use this form to become a CAG member and active supporter of gifted education. Because of CAG's role in lobbying for appropriate education for gifted and talented students, dues payments to CAG are not tax deductible as charitable contributions for Federal income tax purposes.

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